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HOME FARMER.

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TO OUR READERS.

WHILE the year 1890 will long be remembered for its fatality in the world of horticulture, and while none can more deeply regret than we do the loss of long-esteemed familiar friends, so, conversely, few can have greater cause for thankfulness than we have, inasmuch as all the members of the staff of the JOURNAL OF HORTICULTURE, and staunch and steady contributors who shared in its production at the beginning of the year, were happily with us at its close.

The half-year's Volume to which the accompanying Index refers covers a period of great activity in the field in which our readers, more or less actively, engage, or look over interestingly. The centenary of the Chrysanthemum was celebrated by thousands with extraordinary heartiness, so much so as to suggest that the enthusiasm of cultivators and admirers of the flower must have reached its zenith. Time alone will tell whether that is so or not, but at present we are informed that the demand for new and meritorious varieties is greater than ever, which indicates that the Chrysanthemum tide is flowing still.

Hardy fruit culture and preservation have pressed their claims to attention more forcibly than ever; and although 1890 was one of the worst "Apple years" on record, yet the largest competitive exhibition of the fruit ever seen was displayed in the London Guildhall, and attended by 35,000 persons, many more failing to gain entrance to the densely packed building. In connection with that event it should be stated as a matter of public interest, not hitherto made known, that Messrs. G. Bunyard, J. Cheal, T. F. Rivers, A. H. Smee, and J. Wright have received the Freedom of the City of London—the first practical horticulturists on whom, so far as we know, this honour has been conferred.

The hardy fruit supply of the kingdom appears likely to be revolutionised, and it is most necessary that prudent action be taken in every step for ensuring the greatest possible success in cultivation. Sound guidance has been given and will be continued in our pages, by those competent to teach on this important subject.

It is due to our valued coadjutors to know that their endeavours to render the pages of the JOURNAL useful and acceptable to gardeners and amateurs are appreciated, as many letters testify. A thoroughly good and successful gardener writes:—"The JOURNAL is my favourite gardening paper, as I have long thought there is none to approach it for good, sound information on all subjects, and I hope it will always receive the support it deserves." From an amateur we receive this kindly reference:—"Thursday is always looked forward to by me, and I enjoy 'our' Journal exceedingly. It seems as if there existed a bond of friendship between all the readers and contributors, as, indeed, in a sense I really think there is. We are like members of a family, and revere the good Doctor as the head. Let me, as I belong to the East, finish in Eastern style: 'May his shadow never be less.'"

Such generous expressions and good wishes encourage and help us onwards in our work—the promotion of good gardening and good fellowship between all who engage in it, and especially between editors, writers, and readers of the JOURNAL OF HORTICULTURE.



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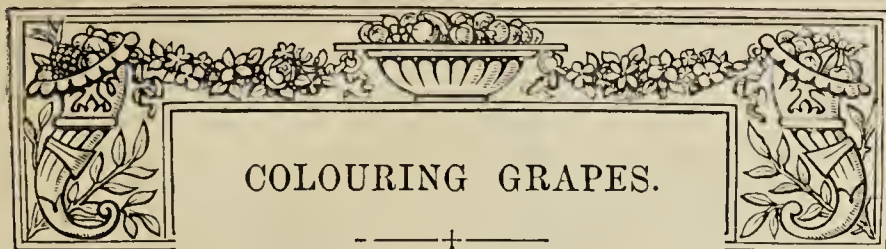
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COLOURING GRAPES.

WHAT I advanced recently concerning colouring Peaches and Nectarines brought out several interesting and instructive facts from esteemed correspondents, and has led to my penning a few thoughts and suggestions on colouring Grapes. Perfection of colouring in Grapes is a prime condition all gardeners are, more or less, ambitious to bring about, but unfortunately many more failures than successes must be recorded every season. Plenty of growers succeed in growing fine bunches and large well-formed berries, only to fail in colouring them properly. At the present time many and anxious are the glances cast at the fast changing berries. Numerous are the reasons given for the different failures, but whether these are wide of the mark or not cannot always be decided. I shall state some of my observations, and leave others to criticise them if they will.

If asked to state what I considered the most frequent cause of non-colouring in Grapes, including white as well as black varieties, I should unhesitatingly assert that overcropping is the chief. It is in respect of the important and nerve-trying work of reducing the number of bunches on a Vine that the greatest judgment is required. There can be no fixed rule laid down, so much depending upon the local conditions. What might appear a light crop in one instance might really be too heavy in another. With everything in first class order at the roots, the proper amount of water being duly supplied and neither too soon nor too late, one condition being quite as much to be avoided as the other, then ought strong Vines to bear and finish a great weight of superior fruit. When, however, the border is largely composed of poor, loose, non-retentive soil, a heavy crop, as understood by market growers, may prove fatal to the prospect of colouring the present crop and the show of bunches next season. Even worse to deal with are Vines established in an old border with the roots nobody knows where, and there are many such, it being impossible to properly colour a heavy crop of fruit in this case.

Past experience ought to be the best if not the only guide, but previous mistakes are not always profited by. If a Vine fail to finish a dozen bunches in good style in one season, where is the sense in leaving as many, or perhaps more, in the next year? Very frequently those in charge fail to estimate the extent of their crops till the berries are past their stoning period and colouring fast. Then they sometimes start reducing the number of bunches, and if this is not a case of locking the stable after the steed has vanished, it comes perilously close to it. The best practice to pursue is to take good note of what a Vine, if an old one, has previously proved itself capable or incapable of maturing properly, and to early reduce the number of bunches accordingly. As regards young Vines, I would suggest that it is wise to undercrop.

Next to overcropping I would credit red spider with being the cause of the greatest number of failures. As it happens, however, one is very frequently the consequence of the other, overcropped Vines apparently falling the most easy prey to red spider. If all accounts are true, and judging from my own observations they most probably are, red spider is very prevalent this season, even under conditions not usually considered favourable to the increase of these insects. Those parching easterly winds in May, accompanied by bright sunshine, seem to bring everything that is

bad in their wake, red spider being one of the worst of the evils due to that cause. Once established on the Vines no amount of moisture in the atmosphere, nor even frequent syringing, will prevent their spreading, as if they cannot retain their hold on the under side of the leaves they take possession of the upper surface. Neither does sulphuring the pipes do much good unless as a preventive in the first instance, while if it is placed on something hot enough to generate extra strong fumes—and I have met with cases where sulphur has been spread over nearly red-hot bricks or a thick piece of hot iron—much more harm will be done in a few minutes to the foliage than the red spider could effect all the season. No, I hold sponging the leaves carefully and repeatedly, if need be, to be the best, and I might say the only remedy, this being commenced directly the yellow patches caused by the red spider are first seen. We use soapy water, and a little sulphur is left on the leaves by the sponge. Once let the spider get the upper hand and it is a case of good-bye to all prospects of successfully colouring the Grapes.

Too much heat and not enough air are conditions which militate seriously against perfect colouring in all black Grapes, and even Muscats would frequently be of superior quality if more air was given when they were ripening. Mr. D. Thomson, Drumlanrig, long ago advocated giving more air to Grapes when they were colouring, and I have to thank him for some of my first successes in colouring the Black Hamburgh sufficiently well to gain prizes in first class company. Many years ago Mr. Thomson advised that a little front ventilation in addition to that at the top be given during the night time, and this plan I have adopted ever since. When only the top lights are opened a short distance the circulation of air in the body of the house is altogether insufficient. What is wanted is a fairly brisk circulation or a current of air playing about the bunches constantly. A very low temperature I do not recommend, as in this case the chemical changes in the berries is incomplete, flavour and keeping qualities both suffering in consequence. In cold damp weather especially we keep the fires going, this improving the circulation and preventing undue lowness of temperature. I am not very particular as to a difference of a few degrees in the heat of a house of Grapes, and rarely heed the thermometer. If it feels comfortable on first entering, say at about 9 P.M., with a little ventilation both at the front and top, that will do. A "comfortable" heat would be from 60° to 70° according to the state of the outer atmosphere, this answering well for both early and late varieties, but even a lower temperature and good circulation of air is preferable to a stagnant atmosphere.

In connection with this part of my subject I cannot do better than to briefly detail an instructive experience, for which I have to thank Mr. T. Smith, Henbury Hill Gardens, near Bristol. This observant gardener is quite of my opinion that if Grapes "had a great deal more air passing over them than they have in most vineries, there would be fewer examples of imperfect colouring." In corroboration of this theory he describes what took place in a curiously constructed house filled with Madresfield Court, the ventilation of which is effected, as in the case of too many houses hereabouts, by means of wooden cappings running the whole length of the house. More air is also admitted by sundry holes and shutters, one of the latter opening out of an earlier house. "When," to use his own words, "the Madresfields were colouring these ventilators were always left open, and there was draught enough passing through to turn a mill. One bunch of Grapes was within 2 feet of this opening, and might frequently be seen oscillating to and fro in a most violent manner. Well, that bunch when finished was as black as a raven right up to the shank, and all the bunches situated in the direct current of air were better coloured than those on either side, the falling off in this respect being marked and gradual." Nothing I can add can convey a more impressive lesson than Mr. Smith's experience, and those who fail

to colour Madresfield Court satisfactorily, these being in a great majority, ought to try what a brisk current of air will do.

Mixed houses are the most difficult to deal with, more especially those in which Muscats are grown alongside either early or later black varieties. The Muscat of Alexandria undoubtedly requires more heat than most other Grapes throughout, or otherwise the berries may be imperfectly set or small, also failing to colour and keep satisfactorily. The best way out of the difficulty is to plant the Muscats at the warmest end of the house, less air being given at all times. In this manner a somewhat higher temperature can be kept, and if the front lights are arranged so as to open separately, currents of air, needful earlier for the black varieties, can be withheld for a time. That Muscats are best grown in a separate compartment must be admitted. If these are principally studied in mixed houses, then must the blacks suffer, and most probably be nearer red than black in colour. I have previously alluded to the plan I adopted of growing a few extra good bunches of Black Hamburgs for show purposes in a house principally devoted to Muscats. A rod was brought through from an adjoining Hamburg house, and in time it reached along the front to the whole length of the compartment. This position is always several degrees cooler than it is higher up the roof, and the bunches yet get the full benefit of the front air and fire heat, the dozen or more bunches left on invariably being heavy and fairly well coloured.

Foster's Seedling and Buckland Sweetwater succeed well in a Hamburg house, while Golden Queen, Mrs. Pearson, Trebbiano, and Calabrian Raisin may be grown to perfection in the same house as Alicante, Lady Downe's, Gros Colman, and other late black Grapes. Black varieties colour best when not unduly exposed to bright sunshine, a thin canopy of healthy foliage rather than a thicket of growth being necessary. The case is somewhat different with white varieties, but even these ought not to be too suddenly exposed to a fierce sunshine, or the berries will be discoloured. A more natural and perfect colour can be "laid on" by admitting abundance of light and air to the bunches, the leaves if necessary being tied back somewhat, and a division between the laterals of adjoining rods also made. What both black and white varieties need is plenty of time, hurrying them, as I have previously pointed out, not being at all prudent. In metal houses, the roofs of which become unbearably hot to the hands on bright summer days, a light shade may well be given, this checking excessive evaporation and consequent evils. Modern houses with very light wooden rafters and large squares of glass are also very trying to the foliage of Grapes, and in many instances might be shaded with advantage. A very thin mixture of lime and water sprayed over with a syringe answers well, and so also does fish netting drawn over. A heavy shading would be injurious, but a thin one saves the foliage of Gros Colman, Mrs. Pinee, and also other varieties less susceptible to injury, and is therefore a factor in the important colouring process.—W. IGGULDEN.

MAGNOLIA PARVIFLORA.

I RECEIVED this remarkable plant in 1885 from a friend in North America, who had it introduced directly from Japan. It is now a handsome young tree of a broad pyramidal shape, 6 feet high and 5 feet through. It stood out unprotected during the last three winters, and has not suffered in the least from our rather severe frosts. The tree is deciduous, and the leaves approach those of *M. conspicua* in form, but are much larger, of a more leathery texture, smoother on the upper side, and bluish-white on the under surface.

It may be considered as free flowering, our plant, now six years old, having had upwards of twenty fine flowers. Its time of flowering is much later than that of the *M. conspicua* or *Yulan* section. The first flowers opened here at the 15th May, they continued in succession, and some of them lasted till the 12th of June. The flower buds are produced within the young leaf buds of the spring growth, as with *Magnolia grandiflora* and *Thompsoniana*, and are not visible months before, as is the case with *M. conspicua* and its varieties. They have a roundish oval shape, as large as a pullet's egg, covered with a bright

brown membrane, which is torn open in two lobes by the opening of the flower.

When opened the first day the flower looks like a beautiful pure white Tulip of the size as figured in diagram 1. It has six to seven

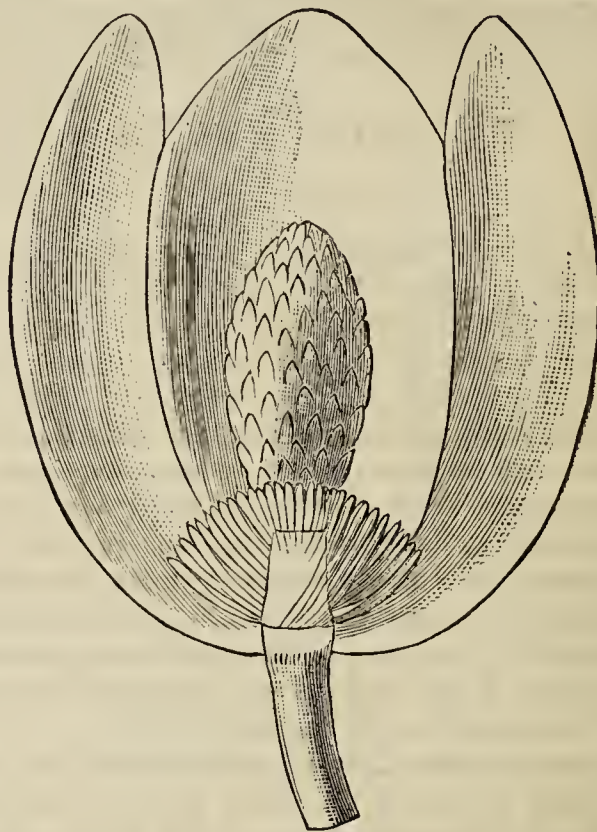


FIG. 1.—MAGNOLIA PARVIFLORA. (Section.)

broad petals, perfectly imbricated, and inserted beneath the ovary and stamens. The second day the flower is more open, and appears like a large Water Lily (*Nymphaea alba*), as figured in diagram 2. From that moment a very agreeable but rather strong perfume, somewhat resembling that of the Pine Apple, is diffused, and can be noted even at some distance.

The third day the flower becomes quite open, the six or seven boat-shaped petals are spread out horizontally, and remain in a star-like position, similar to a large-flowered Clematis, as represented in diagram 3. In this state the flower is in its greatest beauty, and remains so for several days, and this peculiar shape makes it widely different from any other form of Magnolia. The large green-yellowish ovary in the middle, surrounded by a broad crown of upwards 120 dark purple stamens and the milky white petals are all remarkable, and these contrasting colours with its singular shape give to the flower a distinctive character.—CHARLES VAN GEERT, *Antwerp*.

THE BRITISH FRUIT GROWERS' ASSOCIATION. STRAWBERRY SHOW.

THE Committee of this Association having decided to hold a Conference upon Strawberries in connection with the Rose and Pink Show in the Royal Aquarium, Westminster, on Friday, June 27th, it was thought desirable that members should be invited to exhibit as many varieties as possible, as a show of this character would furnish additional interest to a Conference. The invitation was responded to most freely, and though no prizes were offered 160 dishes of Strawberries were staged by nineteen exhibitors, representing nine counties—namely, Kent, Surrey, Bedford, Cambridge, Hertfordshire, Hampshire, Sussex, Middlesex, and Herefordshire. Great difference was noticeable in the size and quality of the fruit, but some extremely fine specimens were included. Some had found the date of the Show too late, and for others it was too early, but it would be impossible to fix a date that would be exactly suitable for all alike. It was a subject for surprise to find that forty varieties were represented from out of doors.

The exhibitors were as follows:—Mr. T. Sharpe, The Royal Strawberry Gardens, Knowle Hill, Virginia Water, had an important and most instructive collection, comprising fifty punnets of exceedingly fine fruits of British Queen, Empress Eugénie, Marguerite, and Sir Joseph Paxton. In size and colour these were unequalled. Three plants of Marguerite loaded with fruits as taken from the ground were shown to indicate their great prolificness at Knowle; one of the boxes constructed to hold four dozen punnets; the baskets employed for gathering from the beds; and a sample of the peculiar soil were also shown by Mr. Sharpe. Fruit and plants were exhibited of a seedling raised from Princess Alice Maud at Knowle, and which is distinguished by a remarkably prolific character; the fruits small, but even and bright in

colour. It has been found useful as an early Strawberry, possessing a rather brisker flavour than the parent variety. A medal was awarded to Mr. Sharpe by the B.F.G.A. for his interesting exhibit.

Cultural commendations were accorded to the following exhibitors—Mr. C. Goldsmith, gardener to W. B. Waterlow, Esq., High Trees, Red Hill, had a box of sixty grand fruits of Sir Joseph Paxton, and one of Vicomtesse Hericart de Thury, both handsome examples. Mr. Ridgewell, Histon Road, near Cambridge, showed a collection comprising good fruits of the following, with the dates of ripening attached—Auguste Nicaise, June 11th; Unser Fritz, June 12th; Eleanor, Captain, June 20th; Sir J. Paxton, June 16th; President, June 18th; Noble, June 7th; Countess, June 20th; British Queen, June 23rd; James Veitch, June 15th; King of the Earlies, June 5th; Marguerite, June 12th; Pauline, June 11th; and Incomparable, a variety raised from Keens' Seedling, probably crossed with Goliath, and which Mr. Ridgewell describes as a useful variety which he has grown for some time. Six punnets of Sir J. Paxton, as sent to market, were also shown, with twelve punnets of Gooseberries. Mr. E. Butts, Leigham Court Gardens, Streatham, showed two dishes of Vicomtesse Hericart de Thury, excellent fruits, even, and of capital flavour. Mr. Allis, Old Warden Park Gardens, Biggleswade, exhibited two dishes of Noble and Marguerite, the fruit extremely fine in both cases. Mr. W. Bates, The Gardens, Poulett Lodge, Twickenham, showed good fruits of Lucas, President, James Veitch, Noble, and Sir Joseph Paxton. Mr. G. W. Cummins, gardener to A. H. Smee, Esq., The Grange, Wallington, sent dishes of King of the Earlies, Keens' Seedling, President, Sir J. Paxton, and Vicomtesse H. de Thury, all represented by good fruit; and Mr. Wythes, gardener to the Duke of Northumberland, Syon House, Brentford, showed dishes of James Veitch, President, Sir J. Paxton, Keens' Seedling, Noble, Vicomtesse H. de Thury, Dr. Hogg, and Sir Harry. Mr. W. Taylor, Osborn Nursery, Hampton, had three fine dishes of Grove End Scarlet, President, and Sir C. Napier.

Votes of thanks were adjudged to all exhibitors, including the following not already mentioned:—Messrs. Paul & Son, Cheshunt, for La Grosse Sucrée, President, Vicomtesse H. de Thury, Noble, A. F. Barron, Pauline, Sir J. Paxton, Commander, and King of the Earlies; Messrs. Saltmarsh & Son, Chelmsford, contributed Noble, Lucas, Commander, James Veitch, President, and Sir Joseph Paxton; Mr. J. Watkins, Hereford, showed a very interesting collection, comprising seventeen varieties, including, in addition to those already mentioned, Sharpless, Dr. Hogg, Auguste Nicaise, Comte de Paris, Stirling Castle, and the Captain; Messrs. G. Bunyard & Co., Maidstone, sent nine dishes of fine fruits; Mr. T. Laxton, Bedford, showed a large collection of his own and other varieties, with several very promising seedlings. The fruits were arranged in neat square baskets with a folding handle. Messrs. H. Cannell & Sons, Swanley, sent two peck baskets of Sir J. Paxton, gathered at Swanley and Eynsford respectively, and showing the way in which the fruits are sent to market from Kent. No packing is used, and the rim of the basket is turned inwards an inch or two, so that the baskets can be placed on the top of each other without injury to the fruit. Messrs. Cheal & Son, Crawley, also

Mr. G. Gordon, Gunnersbury, contributed specimens of *Fragaria elatior*, *F. virginiana*, *F. virginiana variegata*, *F. lucida*, *F. calycina*, and *F. vesca monophylla*, which afforded much interest.

THE CONFERENCE.

The Conference proceedings in St. Stephen's Hall were opened at 5 P.M. by T. Francis Rivers, Esq., who occupied the chair. The pro-

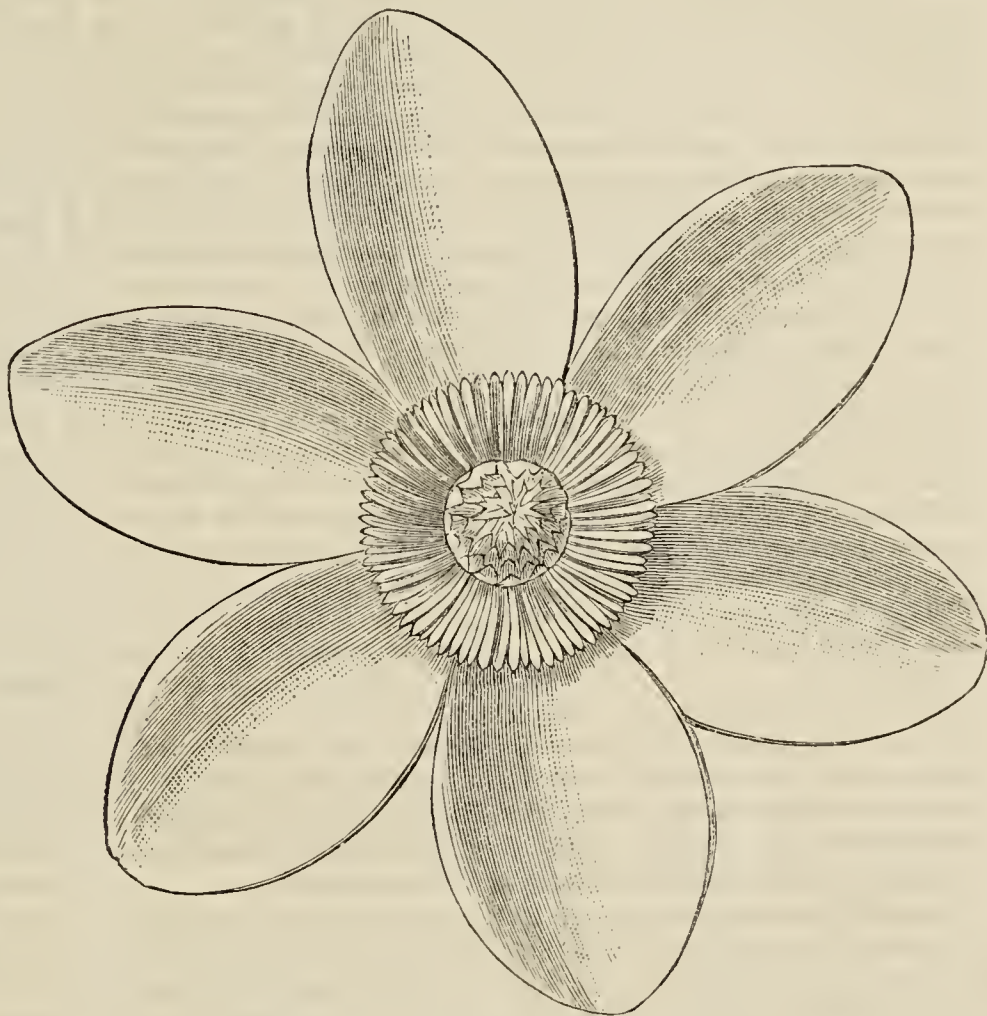


FIG. 3.—MAGNOLIA PARVIFLORA.

gramme comprised the following subjects:—"The Origin of the Cultivated Strawberry," by Mr. Shirley Hibberd; "The Culture of Garden Strawberries," by Mr. J. Wright; "The Market Culture of Strawberries," by Mr. G. Bunyard; and "Seedling Strawberries," by Mr. T. Laxton. So full a programme with the attendant discussion occupied considerable time, but when the customary votes of thanks to the readers of the papers, the Chairman, and Vice-Chairman (Messrs. Rivers and Gordon) were proposed, all expressed themselves thoroughly satisfied with the business of the day. Mr. Rivers introduced the lecturers with the following remarks.

OPENING ADDRESS.

IT is two years since I had the honour of presiding at the first meeting of the British Fruit Growers' Association held at the Crystal Palace, and the honour of again presiding is a privilege and a great gratification, as our continued meetings show that our work has not been fruitless. You will remember that at our first meeting we were successful in drawing public attention to the fact that a national industry was in some danger of being neglected as not being of sufficient importance to be worthy of consideration as an industry. The steady increase of population and of wealth has, however, decided this point. Although orchard fruit cannot be depended on as an annual tainty, this production is a profitable occupation when carried on with care and skill. The statistics furnished by the agricultural returns show a steady increase year by year in the number of acres devoted to fruit culture; this is a very encouraging sign. I think, however, that these returns do not apply to the increase of orchards on farms, but to the fact that professional fruit growers are enlarging their plantations. As these gentlemen would not plant without a reasonable prospect of profit we may infer that they are satisfied with the results. There is, however, another phase of the question which is purely agricultural; there is no doubt that on too many farms the orchards are not in a state of decline but of decay. I venture to think that this unhappy condition is produced not from unwillingness to plant, but from the very mistaken idea that orchard trees will last not only a man's life but that of his children and grandchildren. "It will last my time and theirs"



FIG. 2.—MAGNOLIA PARVIFLORA. (Section.)

showed fruits of Sir J. Paxton and Marguerite. Altogether Sir J. Paxton was shown by twelve exhibitors, and Noble by eleven.

Mr. J. Webber, Covent Garden Market, exhibited samples of Strawberries from Kent, Middlesex, Essex, Lyme Regis, and Southampton.

is a common saying. Still it is not quite true that orchard trees will bear fruit for an unlimited time. It may be assumed that the thirty years allotted to a generation of man may also be taken as the proper life of an orchard, and after this time trees are no longer in their prime. You can easily establish this fact by the measurement of the unproductive trunk and branches of an old tree; you will find the fruit produced at the extremity of the branches does not compensate for the space occupied by the tree both above and below ground, a large proportion of the fruit being undersized and certainly not able to compete in the markets with the fruit of younger and more vigorous trees. Now, it is part of our business to urge upon all the importance of the restoration of our farm orchards. The interests of landlord and tenant, not only of this generation but of those who are to succeed, are intimately bound up with this matter, but these interests will not be served by planting a few trees in a grass orchard and leaving them to grow without further attention. A small orchard on land carefully selected, well cultivated, and well fenced will be more profitable than a grass orchard of larger acreage planted with standard trees, and supposed to last for a hundred years. Every farmer knows the extreme difficulty of protecting trees from stock, and as he usually finds a farm in which the trees are old and rugged enough to serve as rubbing posts for cattle, he is inclined to leave things as they are. I hope and am sure that some day a thorough and beneficial change will be made in orchard planting, and that all farms will have properly cultivated fruit gardens in which orchard fruit will have its share, but no more, as the land will give annual and certain crops of Strawberries, Currants, Gooseberries, &c., which will always reward the cultivator when the Apples fail. We have now obtained in this country the best varieties of all hardy fruits; they are not surpassed by any other. This has been demonstrated by the splendid autumnal shows held at the Crystal Palace, and in a very remarkable degree, at the Apple and Pea Conference held by the Royal Horticultural Society, the invitation given by this Society was answered by noble collections of fruit from all parts, collections well worthy of the country and of the growers.

An exhibition of hardy fruit is to be held in October at the Guildhall, under the presidency of Sir James Whitehead, and although the fruit crop is not generally plentiful, there is no doubt but that this Exhibition will reward the most ardent hopes of the originator. It is, I think, the first of the exhibitions held in the City, and is designed partly to promote the growth of fruit amongst cottagers. The interest taken in this Exhibition is in every way worthy of the wealthiest city in the empire. Some centuries past the gardens of a part of this great town were famous for Strawberries. Everyone knows the story of the Strawberries of the Bishop of Ely, grown in Ely Place, Holborn. In our time these Strawberries are to be found in the streets, and I may say that the streets of London furnish Strawberries at this time which in size and flavour are equal to those in any other part of the world. The gentlemen who are to deliver lectures to-day are thoroughly well qualified for the work, and I hope that both instruction and pleasure will be gained from the information they have to give. There is still considerable improvement possible in Strawberries; for instance, all of us would like to have British Queens lasting from June to the end of July. The question of soil for Strawberries ought to be thoroughly established. Different sorts flourish best in different districts. I will not, however, detain you any longer, as these points will be thoroughly explained by the lecturers.

I desire to draw attention to the very fine collection of Strawberries exhibited by Mr. Sharpe of Virginia Water, who has evidently the right soil for Strawberries, which, combined with his own skill, has produced a collection which is deservedly worthy of the thanks of the Association, and we are also much indebted to all of the exhibitors for their very fine collections.

Before I conclude I should like to offer the thanks of the Association to our Hon. Secretary, Mr. Lewis Castle, to whose energy and skill the Association mainly owes its success. He has given very much valuable time and attention to the interests of the Society, and I shall be glad to record our thanks for his exertions.

The subject of the lectures to be given to-day must always occupy a prominent part of any fruit orchard, as well as on Strawberry farms as it can be cultivated with profit and success between rows of fruit trees, and is certain to produce a crop sufficient to compensate for the failure of the fruit on the trees. There is, I understand, an enormous increase in the importation of Strawberries from abroad; it is therefore absolutely necessary that the most careful attention should be given to the selection of proper sorts for the cultivation for sale, as it is positively certain that the best sorts will always command the highest price and

the readiest sale. I will not detain you any longer, as time presses, and I will ask Mr. Shirley Hibberd to give us the history of the Strawberry.

THE ORIGIN OF THE CULTIVATED STRAWBERRY.

BY MR. SHIRLEY HIBBERD.

THE cultivated Strawberry of British gardens is a comparatively modern fruit, for of ancient history it has none; and consequently there are not many mysteries in connection with its origin, the clearing up of which might bring honour to the present essayist. But we have ancient Strawberries that can scarcely be said to be cultivated now, although there is something to be said for them as wholesome, agreeable fruits that have a somewhat picturesque history. Time was when the wild berry of the woods had a place in gardens, but that time has passed; our native wood Strawberry has been superseded by a more stately, and in some respects superior fruit, that obtains from us an immensity of skill and care; while as to the Strawberry of the past, it is scarcely known to any but wayside botanists and village children; and these important persons prefer the modern British Queen, when they can get it, to the freshest and ripest berry from the banks. When the Duke of Gloucester sent the Bishop of Ely to obtain for him some Strawberries from the Bishop's garden at Holborn, it was simply to get rid of him in aid of a conference with the Duke of Buckingham. But the incident has historical value, as Shakespeare derived it from Sir Thomas More's "Tragical History of Richard III.," and it tells of the esteem in which the British *Fragaria vesca* was held in the days of the last of the Plantagenets. The Strawberries were sent for on Friday, June 13th, 1483, at which time Mayster Groshede was engaged in translating into English the "Boke of Husbandry," printed by Wynkin de Worde, in which the Strawberry is not even mentioned. The Bishop of Ely's garden was one of the most important for its productions and management in the fourteenth and fifteenth centuries; and as at that time the wild wood Strawberry was alone cultivated in this country, the incident marks the esteem of our forefathers for a fruit that now obtains so little attention as, in towns at least, to be practically unknown. Thomas Tusser, writing his "Hundred Points of Good Husbandry" about 1557, gives directions for planting Strawberries, the roots of which are "growing abroad among thorns in the wood," and in his "September's Husbandry" the Strawberries remind him of other things then to be planted.

"The Gooseberry, Respis, and Roses al three,
With Strawberries under them trimly agree."

Even so late as the time of Sir Hugh Platt, who wrote his "Garden of Eden" about the year 1606, cultivated the British Strawberry in his garden in St. Martin's Lane, London, where it was considered a better fruit than the Virginian, which at that time had been introduced, although the books give a later date for it. Sir Hugh says: "Strawberries which grow in woods prosper best in gardens," and this agrees with the Shakesperian philosophy as spoken by the mouth of another Bishop of Ely in the drama of "King Henry V.," to the effect that

"The Strawberry grows underneath the nettle,
And wholesome berries thrive and ripen best
Neighbour'd by fruit of baser quality."

The common explanation of the name as derived from the practice of spreading straw on the ground to keep the fruit clean is as shallow as common explanations usually are. Centuries before it became the practice to strew straw for Strawberries it was known by the same name as now. In the most ancient documents in which English names of plants occur we find the *Strea-berige*, *Straeberia-wisan*, *Strebere-wise*, and *Strabery*. It is the plant that strays by the aid of threads or wires from the parent centre to find pastures new, and in so doing strews or straws itself upon the soil, as quaintly put in an ancient song—

"And can the physitian make sicke men well,
And can the magician a fortune devine,
Without Lily, Germander, and Sops-in-wine?
With Sweet-bryer
And Bon-fire
And Strawberry-wyer
And Collumbine."

The above references to Shakespeare include the only occasions of his mention of the Strawberry, for the handkerchief spotted with Strawberries that Othello gave to Desdemona is so described through a misconception of the poet's, the truth being that the handkerchief was marked with three Mulberries, which was the device of the great captain's shield. It was about the time of Shakespeare, however, that the garden Strawberry of the present day may be said to have come into

being. The books are full of interest on this point. In Lyte's translation of the Herbal of Dodons, 1578, the wood Strawberry alone is mentioned as a plant that grows in shadowy woods, and deep trenches, and banks, and by highway sides. In "Gerard's Herbal," 1597, only two kinds are mentioned, and they are the wood Strawberry, *F. vesca*, and the Hautbois, *F. elatior*, described as red and white. But in Parkinson's "Paradisus," published 1629, we have, in addition to these, the Virginian Strawberry and the Bohemian, and these, so far as the chronology is concerned, may be considered the parents of our modern Strawberries.

It is of considerable importance to note that in the introduction to his chapter on Strawberries Parkinson makes a distinct declaration that "the wilde Strawberry that groweth in the woods is our garden Strawberry, but bettered by the soyle and transplanting." He then describes the red, the white, and the green forms of Alpine and Hautbois Strawberries, and evidently ranks the Virginian and the Bohemian far below them in merit, for he says "scarce can one Strawberry be seene ripe among a number of plants. I think the reason thereof to be the want of skill or industry to order it aright. For the Bohemian and all other Strawberries will not bear kindly, if you suffer them to grow with many strings, and therefore they are still cut away." That the so-called Bohemian Strawberry was an interesting novelty may be concluded from Parkinson's description of the berries as measuring "neere five inches about." He says, "Master Quester the Postmaster first brought them ouer in our country, as I understand, but I know no man so industrious in the careful planting and bringing them to perfection in that plentiful manner, as Master Vincent Sion who dwelt on the Banck side, near the old Paris garden stairs, who from seven roots, as he affirmed to me, in one yeare and a halfe, planted halfe an acre of ground with the increase from them, besides those he gave away to his friends; and with him I have seen such, and of that bignesse before mentioned."

It will be observed that Parkinson had no success with his Virginian and Bohemian Strawberries. It should not surprise us that those newcomers occasioned perplexity, for the truth must be told that in the fifteenth and sixteenth and seventeenth centuries the cultivation of this fruit was understood by very few, and the produce of the woodlands was of far more importance than that of gardens until a quite new race had been established. Mr. T. Hudson Turner, the eminent archæologist and author of "Manners and Household Expenses of England," writing on horticulture in the thirteenth and fourteenth centuries, says:—

"Strawberries and Raspberries rarely occur in early accounts, owing probably to the fact that they were not cultivated in gardens, and known only as wild fruit. Strawberries are named once in the Household Roll of the Countess of Leicester for the year 1265. The plant does not seem to have been much grown even at the end of the sixteenth century. Lawson speaks of the roots of trees being 'powdred' with Strawberries, red, white, and green. Raspberries, Barberries, and Currants he describes as grown in borders. Both fruits, being indigenous, were probably to be found plentifully in the present day in Italy and other parts of Europe."

The allusions to the fruit in poetry and the drama bear out the statement of the antiquary. We find in Ben Jonson a person saying:—

"My son hath sent you
A pot of Strawberries gather'd in the wood
To mingle with your cream."

Spenser had in mind the attractions of wood Strawberries, where, in the tenth canto of the sixth book of the "Faerie Queen," he takes Calidore and Corydon and Pastorell "to the green woods to gather Strawberries."

It is a question of some interest—when did the Scarlet or Virginian Strawberry first reach this country? It is named in a catalogue of Jean Robin, botanist to Louis XIII., in 1614, and in Johnson's "History of English Gardening," page 343, the date of its introduction to England is stated to be 1625, but Sir Hugh Platt possessed it in 1606. Parkinson had it in 1629, and, as already remarked, was unable to grow it, probably because the plants were allowed to run into a mat, the systematic propagation now practised being then unknown. Indeed, the author of the "Paradisus" remarks at page 528 that "Strawberries will not beare kindly if you suffer them to grow with many strings, and therefore they are still cut away." The cultivation of the Strawberry, as described by John Evelyn at page 201 of the second volume of his "Compleat Gardener," published 1693, begins with the removal of plants from the woods and the putting of two or three plants in a hole, which is made with a stick 9 or 10 inches asunder. He recognises only two

kinds, the red and the white, evidently knowing nothing of the Virginian Strawberry. It appears that the system pursued ensured a crop of fruit in the second year after planting, and that was the only crop obtained; consequently annual or biennial renewal of the beds was necessary. It may be assumed, moreover, that the best forms of the plant were not secured in the first instance, and certainly there was no haste shown in raising seedlings, nor did anyone suspect the capabilities of the plant for variation and improvement. To obtain a faithful representation of the subject in what may be termed the middle period, I turn to the sixth edition of Miller's "Gardeners' Dictionary," published 1771, where, under *Fragaria*, I find it stated that there were four kinds of Strawberries then in cultivation—the Wood Strawberry, *Fragaria vesca*; the Scarlet Strawberry, *F. virginiana*; Hautbois, *F. muricata*, "with fruits as large as a small Plum;" and the Chili or Frutilla Strawberry, *F. chilensis*, "with a large fruit and hairy fleshy leaves." Speaking of the introduction of the Chili Strawberry Miller says, "In the year 1727 I brought a parcel of the plants to England, which were communicated to me by Mr. George Clifford of Amsterdam, who had large beds of this sort growing in his gardens at Hartecamp. The leaves of this sort are hairy, oval, and of a much thicker substance than those of any sort yet known, and fixed upon very long hairy footstalks; the runners from the plants are very large, hairy, and extend to a great length. The footstalks which sustain the flowers are very strong; the leaves of the empalement (calyx) are long and hairy. The flowers are large, and often deformed; so are the fruits also when cultivated in very strong land, in which the plants produce plenty, which are firm and well flavoured; but as it is a bad bearer in most places where it has been cultivated, so in general it has been neglected."

It is of great importance—so it appears to me—to note further what Miller says on some other points. In common with Parkinson he reports three varieties of the wood Strawberry—the red, the white, and the green, the last-named being particularly valued for its fine flavour. The scarlet Strawberry of Virginia he places high above all other sorts for earliness to ripen and every other good quality, and he adds, "it is so different from the wood Strawberry in leaf, flower, and fruit, that there need be no doubt of their being distinct species." It startles one to find Miller describing the Hautbois Strawberry, which he catalogues *F. muricata*, as originally derived from America. He speaks of its capability of producing large fruit of a globular form as the result of good cultivation, and he adds that when neglected for a year or two these superior kinds degenerate to the common Hautbois. I submit that the sample of *F. muricata* on the table kindly supplied by G. F. Wilson, Esq., F.R.S., of Weybridge, will give the reason for its name as well as an explanation of its history. It is the kind described by Parkinson on page 528 as "somewhat reddish, like unto a Strawberry, but with many small harmless prickles on them, which may be eaten and chewed in the mouth without any manner of offence." This is the prickly Strawberry of Tradescant, formerly found wild in Hampstead Wood near London, now only known as a garden curiosity. It is a variety of the Hautbois, and when Miller says he obtained it from America, we need not put that down as one of his blunders, because our wood Strawberry has certainly been found growing wild on the American continent, and Miller does not say whether he obtained it as a wildling or as a garden plant.

We have thus far only two or at the utmost three species of Strawberry before us; these we may class as the Low wood (*F. vesca*), the High wood (*F. elatior*), and the Scarlet (*F. virginiana*).

In the year 1759 at the latest, the Pine Strawberry (*Fragaria grandiflora*) was introduced. The source of this is not clearly determined, but Surinam is commonly named as its native country. There can be no objection in the nature of things to the acceptance of Surinam as the original home of the Pine Strawberry, for it should be observed that it does not take us from the American continent. Indeed there is a peculiar propriety in finding a Strawberry in Guiana, for we may suspect it to be but an Eastern form of the Chilian species; which, perhaps, is but a Southern form of the Virginian species; just as our wood Strawberry is the Western, and the Hautbois the Eastern form of the European species; and all five are probably radiations from one centre, and there cannot be a question that all will cross or breed together, as commonly happens with plants nearly related in origin and constitution.

While Miller tells us he obtained the Pine Strawberry from a friend in Amsterdam, who derived it from Surinam, Duhamel speaks positively of its having been raised from the seed of the Chili Strawberry. Both may be right, for the Dutch settled at Surinam in 1654, and on the higher lands of that tropical country many plants from cool climates prosper; and from the beginning of the world a Dutchman would have

a garden wherever he himself might be planted, and would gather treasures from all climates to furnish it. That the Pine Strawberry is closely related to the Chili is sufficiently evident to give reasonable colour to Duhamel's declaration.

(To be continued.)

GARDEN STRAWBERRIES.

BY MR. J. WRIGHT.

"DOUBTLESS God could have made a better berry than the Strawberry, but doubtless God never did." Thus wrote a quaint old doctor many years ago. He loved Strawberries when there were no such varieties as we have now, and it may be fairly assumed if he could be with us to-day he would be in the seventh heaven of delight. He has a large heritage of lovers of the luscious berries, and though all the millions of Strawberry eaters cannot be expected to agree that it is the best of all fruits, yet no other that grows and ripens in our gardens is so popular during its period of use in June and July. It is without a doubt the prince of hardy dessert fruits of early summer, and may be grown in every garden in the land, large or small, in town or country, that is capable of producing good crops of Peas and Potatoes. The Strawberry is, indeed, a better town plant than either of the familiar kinds just mentioned, at least the varieties with broad, glossy, recurving leaves are, such as Kecns' Seedling, but those with woolly or downy foliage, and more or less cupped for catching the smuts, are best in the pure air of the country. The Strawberry, then, is a good town and suburban garden fruit, and might be grown in hundreds of small enclosures from which it is now absent; and I am not aware that so much that is good can be obtained in an equally limited space as from a well grown and heavily fruited plant of the Strawberry. As I should like the greatest possible number of persons who have the necessary means to have a few Strawberries of their own growing I direct attention to the adaptability of the plant to the smallest gardens in which fruit of any kind can be cultivated.

The Strawberry is naturally and essentially a midsummer fruit, and in the great majority of gardens the crops are over all too soon. By special effort and adequate means Strawberries can be had during every month in the year, but I am not one of those who think an all-the-year-round supply of any kind of fruit generally desirable. The appetite does not grow with what it feeds upon when it feeds continually on the same kind of fruit. It is the periodical breaks in the supply, and the change consequent thereupon, that give zest and enjoyment to that which is produced at the different periods of the year. Forced Strawberries can be had in February, March, April, and May, then comes the great natural feast in June and July. Alpines can be had in August and September, and in the last-named month second crops may be produced from early forced plants, duly cared for and planted out. These continue in October. Others of the forced plants, but later, can be made to bear second crops in pots in November, December, January, and I have seen them in February. Thus is the Strawberry chain linked round the year. But some of the links are very weak, and cost a great deal more than they are worth in producing. British gardeners, however, like to accomplish feats of skill, and the endeavour is most worthy. Give them the means, and I believe we have men in our ranks who can achieve anything that is possible in the art of cultivation.

It is not my intention to dwell on the manner in which exceptional "feats" are performed under exceptional circumstances by exceptional men, for only a few can dance on the gardening tight rope creditably, and the great majority can spend their time more usefully in other ways. I prefer, then, to dwell on the more useful aspects of Strawberry growing, with the object of eliciting information relative to the best methods of providing the best supply of fruit over the longest period in a natural way; or, in other words, we will try, if you please, to keep in view the requirements of the many rather than the fancies of the few in the production of a satisfactory supply of this much coveted and delicious fruit.

The great desire of the majority of gardeners and owners of gardens is to have a plentiful daily supply of fine well-flavoured fruit from the earliest possible date to the latest in the Strawberry season. In endeavouring to attain this object four questions arise for consideration—namely, 1, choice of varieties; 2, sites for the plantations; 3, soil and its preparation; 4, methods of cultivation.

EARLY STRAWBERRIES.

More than thirty years ago I gathered Peas sown and grown in the open 150 miles north of London on the 25th of May. Since then at the least a dozen varieties have been introduced as a week earlier than their predecessors. If they had maintained their precocity we should have a

gain of about three months in earliness. But they did not. It is a question if more than a week has been gained in time during that period, but there has been a good gain in size and quality. How stands the case with Strawberries? I am inclined to think it is much the same. Have we gained more than a week in earliness by new varieties during the same period of time? If we have gained a week it is a good advance. I doubt if we have gained more, except perhaps with one variety. In those far past days I gathered ripe fruit of Black Prince on the 2nd day of June. Has anyone here gathered outdoor Strawberries a week before that date, and if so, where, and of what variety? But we have gained distinctly in both size and quality, and Black Prince is practically obsolete. We have made good progress therefore, and now the question that the great scattered community of Strawberry growers want answering is this, Which are the best, most reliable, and distinctly early Strawberries? Can the collective wisdom of this assembly answer that question?

If I were compelled to limit myself to one early Strawberry I should not hesitate to choose Laxton's Noble. Some person may possibly object because it is not of the highest quality. It is good enough for me to begin with, and it is good enough for a noble lord who likes Strawberries; but he likes money too, and his gardener is expected to make as much as he can by selling the best produce, supplying the house with "seconds." Several lords do this sort of thing nowadays. It seems fashionable. In the garden of the noble in question was a bed of the Noble Strawberry this year. The fruit was splendid, and the gardener thought he was going to make a little fortune by it, for he, very properly, has "commission" you know. But his lord and master showed that he liked fine Strawberries better than money, for he would not have a pound of them sold, or it would have brought him 2s. It was of no use telling him the fruit was only of second quality. It was the first and the finest, and as there was none for comparison it was the *best* at the time, and as I have said good enough to begin with, and as the richer sorts followed they would be enjoyed the more. I place Noble, then, first on *my* list as the most useful early Strawberry, and reliable in being such a good grower and bearer, even when the plants are small and the soil not rich. Noble was raised from Forman's Excelsior, and I saw fruits of it in 1886 that measured upwards of 7 inches in circumference round the shoulders.

Totally different in character is the next to be named, indeed it is of a different race, and so far as I know it is the earliest Strawberry in cultivation in this country. It is an American introduction, and has been mentioned in the press as the Crescent and Crescent Seedling; but Mr. Rivers, I believe, though I have not asked him, received it under the name of Crescent City. An award of merit was recommended for some berries of it from Messrs. Paul & Son, Cheshunt, by the Fruit Committee at the last meeting of the Royal Horticultural Society. The fruit is small but not trashy. It is very bright and of good quality. It may be described as an enlarged form of the Grove End Scarlet, and the best descendant of the old Scarlet Virginian Strawberry that has found its way to our gardens. It is a free grower at Chiswick, and produces fruit bountifully in large clusters or panicles. Mr. Barron mentions as a peculiarity of this Strawberry, which may be regarded as a merit, that the fruits hang on the plant after they are ripe longer than those of any other variety. It is essentially a garden Strawberry, and not likely to be a profitable market variety. The correct name of it is, I suspect, Crescent Seedling. It has been grown under that name in America for some years, and was raised by Mr. Parmelee of New Haven, Connecticut. This is what an American author and fruit grower, Mr. Roe, said about it in 1880—"It is a very distinct and remarkable variety, and I think will fill an important place in Strawberry culture. In productiveness on many soils it will exceed any variety with which I am acquainted. The young plants are small and the foliage is slender and delicate, but they have the power to live and multiply beyond that of any other variety I have seen. It thrives under the sun of Georgia, and cares naught for the cold of Canada; it practically extends the domain of the Strawberry over the continent, and renders the laziest man in the land who has no Strawberries without excuse." Please to remember that is what an American says, not what I say, and he figures a fruit $1\frac{1}{2}$ inch in diameter. The variety is sure to be tried in many gardens in this country, but how it will answer time only can tell. What we know is that it is the earliest of all in the Chiswick collection.

The best in quality probably of all early Strawberries is Laxton's King of the Earlies, and in soil that suits it the plants grow and bear well. The fruits are small to medium size, or in other words, small in poor, medium-sized in good soil. It is useless for light and impoverished soil, as the plants will not grow. It may, perhaps, be described as one

of the worst varieties for bad Strawberry soil, as Noble is one of the best. They practically ripen at the same time, and nearly a week after Crescent Seedling.

One other distinctly early Strawberry may be named—Pauline, but it is exceedingly capricious. In one garden I find large fruits of it ripe with King of the Earlies; in another they are small and unshapely. It is a variety to be tried experimentally, and where it succeeds it will probably be increased, for in the best form the fruit is good in size and quality.

On warm sandy soils and sheltered positions Marguerite ripens early, and produces magnificent fruit, but is not to be relied on in cold soils and districts. I may refer to it again.

LATE STRAWBERRIES.

We will now pass to the late Strawberries, and if the best of these can be determined by experienced cultivators their verdict will be acceptable to the less experienced, who desire to extend the Strawberry season, but are in doubt as to which varieties to plant. Bear in mind that profit is not the object, but pleasure—the pleasure of gathering good dishes of fine Strawberries when the crops have been over a fortnight in a neighbour's garden. I think I never saw a clergyman so pleased as when in this position, and it was not a selfish pleasure, for he gave most of his fruit to his friends, the sick poor having the first claim to his produce. The variety was Eleanor (sometimes, I believe, called Oxonian). It is the largest late Strawberry I have grown, though I am not sure it is the best and most useful, when handsome fruits of Elton Pine are remembered at the same time, and perhaps a little later.

Frogmore Late Pine lingers long in the beds, but, like Pauline, the variety seems to have peculiar preferences, and in some gardens is of little or no value.

Waterloo is a Strawberry to plant for succeeding the midseason sorts. It is not the latest, but the largest and darkest, and the only late Strawberry I know that is wanted before it is ready. This is the Chiswick experience, and those who "take" the fruit from there anxiously wait for the great crimson purple berries of Waterloo, and wonder they are so long in coming. As pointing to a well marked distinction between early and late Strawberries, it may be stated that when the crop of Crescent Seedling was ripe this year at Chiswick the plants of Waterloo were expanding their flowers.

Loxford Hall Seedling is one of the latest, and where it succeeds one of the best. I have seen it succeed admirably, but am bound to add that I have also seen it fail disastrously.

Trial rows of Strawberries form an interesting feature in gardens, and cost little; while if a few varieties fail the knowledge gained affords abundant compensation. I know of no other method of determining the varieties which will give individual cultivators such complete and permanent satisfaction.

The varieties suggested for trial for affording the earliest and latest supplies then stand thus:—

EARLY.	LATE.
Noble.	Elton Pine.
Crescent Seedling.	Eleanor.
King of the Earlies.	Waterloo.
Pauline.	Frogmore Late Pine.
Marguerite.	Loxford Hall Seedling.

If I were limited to six out of the ten varieties named I should take the first three in each case; but should like them all to be tried in gardens in which they have not hitherto been grown. The best early and late sorts settled, a good and varied midseason supply is easily produced.

(To be continued.)

[The conclusion of Mr. Shirley Hibberd's and of Mr. J. Wright's papers are unavoidably held over until another issue. The publication of the admirable papers on "The Market Culture of Strawberries," by Mr. G. Bunyard, and on "Seedling Strawberries," by Mr. Thomas Laxton, must also be postponed, owing to the demand on our space this week.]

THE LATE MR. B. S. WILLIAMS.

IN our brief note last week it was impossible to give any details of the late Mr. Williams' career. We therefore take the first opportunity to furnish our readers with an outline sketch of his life. Mr. B. S. Williams was born at Hoddesdon on March 2nd, 1824, his father being a gardener, who at the age of ninety-four is still alive. After a due period of schooling Mr. Williams commenced his gardening career at the age of fourteen under his father in Mr. John Warner's garden at Hoddesdon. Leaving there after three years' service he spent some time in another garden, where he began exhibiting Pansies, with other

plants and flowers. He was also in Messrs. Paul & Sons' Nursery at Cheshunt, and then returned to Hoddesdon for a time, and was appointed gardener to Mr. C. B. Warner. In the service of this gentleman he made his name as a highly successful plant cultivator and exhibitor, excelling specially with Orchids.

In 1851 Mr. Williams contributed a series of articles to the *Gardeners' Chronicle*, entitled "Orchids for the Million," which were subsequently republished as the "Orchid Growers' Manual," a book that has obtained a large share of popularity, being now in its sixth edition. Several other books on Ferns and stove and greenhouse plants have also been published by Mr. Williams, which are familiar in many garden libraries. To Mr. Warner's fine work, "Select Orchidaceous Plants," Mr. Williams also contributed, and later still he commenced the monthly issue of the "Orchid Album," devoted entirely to coloured plates and descriptions of Orchids, eight volumes having appeared up to the present time, comprising nearly 400 plates.

Mr. Williams commenced business as a nurseryman in 1856, at the Seven Sisters Road, Holloway, in partnership with Mr. R. Parker, but afterwards removed to Upper Holloway, where the Victoria and Paradise Nurseries have gained considerable fame for the collection of choice Orchids and plants of all kinds. A short time since Mr. B. S. Williams took his son Mr. Henry Williams into partnership, who for some years has rendered his father valuable assistance in the management of a large business. Mr. Williams was a frequent visitor to the principal horticultural shows in the kingdom, both as judge and exhibitor, and his unvarying genial manner endeared him to thousands of horticulturists.

The funeral took place at Highgate Cemetery at 12 noon on Monday last, when a large number of friends assembled, nearly 400 gathering round the grave. Flowers were contributed in profusion, and ample testimony was afforded of the high respect in which the late Mr. Williams was held by all who knew him.



EVENTS OF THE WEEK.—This is the height of the Rose Show season, and the exhibitions follow rapidly for the next week or two. To-day (Thursday, July 3rd) Shows will be held at Bath, Farningham, and Norwich. On July 5th the National Rose Society's Metropolitan Exhibition will be held at the Crystal Palace, Sydenham, the great event of the Rose season. On July the 8th the Royal Horticultural Society's Fruit, Floral, and Orchid Committees meet at the Drill Hall, Westminster, at twelve noon. Shows will also take place on the same day at Winchester, Ipswich, and Gloucester. July 9th is devoted to shows at Teddington, Brighton, Diss, Ealing, and Tunbridge Wells.

— THE WEATHER IN THE METROPOLITAN DISTRICT has been generally wet and dull, relieved by comparatively few hours' sunshine. Many gardeners and farmers would now gladly welcome a change to a summer temperature and a clear atmosphere.

— AT the RICHMOND (SURREY) HORTICULTURAL SOCIETY'S SHOW last week Mrs. Ford had a floral stall for the benefit of the Gardeners' Orphan Fund. It proved a great success, realising a profit of £6 6s. 6d. for the Fund, and Mrs. Ford wishes to thank the numerous donors of flowers and the ladies who assisted her on that occasion.

— AN extremely NOVEL TABLE DECORATION was recently provided at Stafford House, the London residence of the Duke of Sutherland, and one of the most palatial mansions in the metropolis. The idea was a winter scene and snowstorm, and it was carried out in an artistic manner by the gardener, Mr. Peter Blair. At each end of the table was a large branch of tree-like proportions of the common Birch, denuded of its leaves and covered with flour, powdered glass, or plaster of Paris secured to the branches by a previous moistening with water. Around these were stems and leaves of *Arundinaria falcata*, *Cupressus*, and Ivy, the centre of the table being occupied with a large block of ice covered with snowclad Ivy. Silver plate was employed on the table, the only colour being afforded by the fruit, handsome samples of Nectarines, Peaches, Grapes, Strawberries, &c. For a summer table a cooler effect could not be produced, and when lighted up the appearance was most beautiful.

— THE same evening we inspected an example of Mr. Wills's tasteful work in FLORAL DECORATION at a mansion in South Audley Street. Roses, White Lilies, and *Hydrangea paniculata* were almost exclusively employed with Ferns, Palms, and other foliage plants, but the manner in which they were arranged in recesses on the staircase, in the windows,

on mantel-shelves, and in fire grates was faultless. Mr. Wills has given so many examples of his taste in this work that no commendation can be of much advantage to him, but the graceful combination of the flowers and plants named was something to be proud of, entirely free from formality, effective and graceful in the extreme.

— MR. W. BAYLOR HARTLAND, Cork, sends us a DAFFODIL ALBUM, containing thirty-two faithful woodcut illustrations of Daffodils, from drawings by Miss Gertrude Hartland, but no descriptions are included.

— WASHING THE STEMS OF TREES—I have long considered that too little attention has been paid to the washing and wetting the boles of trees during times of drought. I think if it was practised good results would follow.—W. T.

— BIRMINGHAM GARDENERS' ASSOCIATION.—A special meeting was held on the evening of June 24th for the purpose of an exhibition of cut herbaceous plants, and some of the well-known trade growers were asked to contribute a few specimens of the rarer and less known species and varieties. Messrs. Backhouse & Son, York, sent a select collection, amongst them *Pæonia sinensis* varieties—viz., Modesty, Whitleyi plena, and Madame Bacon, all beautiful varieties; *Campanula persicifolia alba grandiflora*, *Primula reticulata*, *Clematis evecta*, *Cypripedium spectabile*, *Lilium Washingtonianum*, *Inula glandulosa*, *Tropæolum polyphyllum*, and some handsome varieties of Spanish and herbaceous Iris, &c. Messrs. Harkness & Sons, nurserymen, Bedale, also sent a large collection. Mr. Thomas Ware, Hale Farm Nurseries, Tottenham, contributed a grand collection, including many fine *Liliums*. Messrs. Richard Smith & Co., nurserymen, Worcester, sent a good group, including *Erigeron multiradiatum*, *Ligularia macrophylla*, *Spiræa Aruncus elata*, *Sidalcea candida*, *Dictamnus Fraxinella*, *Orchis foliosa*, and *Pæonia* varieties. Messrs. Hewitt and Co., the Nurseries, Solihull, sent a well set up stand of handsome flowers. Messrs. Sutton & Sons, Reading, contributed a collection of outdoor flowers, including bulbous Irises, *Spiræas*, in variety, new varieties of Sweet Peas, Shirley and Iceland Poppies, *Melica altissima*, a very distinct and handsome ornamental Grass with pale purple bracts, and some fine *Gloxinia* flowers. Mr. W. B. Child, florist, Acock Green, had a standard of herbaceous flowers well arranged. Mr. Jinks, gardener to J. E. Wilson, Esq., Wyddington, and Mr. Cryer, gardener to J. A. Kenrick, Esq., Berrow Court, also exhibited well. Hearty votes of thanks were awarded to each exhibitor, and the Exhibition will give an impetus to the further culture of herbaceous plants, as a large number of gardeners were present, and note-taking general. A general interesting discussion followed.

— HAM GREEN FAVOURITE TOMATO.—Any expression of opinion as to the value of this variety in comparison with other well-known varieties will be acceptable to myself and others. At least 250 plants of it are growing in one of the houses of Tomatoes at Mr. Henry Whateley's, Kenilworth, and for earliness and cropping it is much behind Hackwood Park, and a selected rough red variety, of which Hackwood Park is a parent, grown extensively here, and wonderful croppers.

— IXORA WESTI is not much known, but it is a great acquisition, new in colour, and a beautiful variety. The trusses are large, of a lovely cerise pink colour, and the foliage fine, and the plant has a good constitution. A good specimen of it is now in bloom in Mr. Alderman Marriott's garden at Coventry. Mr. Finch, the gardener, has a very beautiful variety of *Cattleya Mendeli* in flower, the petals and tube pure ivory white, and the labellum richly coloured.—S. H.

— LEEDS INTERNATIONAL EXHIBITION.—We have received the schedule of a "Floral and Horticultural Fête" to be held in connection with the above Exhibition, on July 22nd and two following days. Very good prizes are offered in thirty classes, and a good general display should be forthcoming. Mr. J. H. Clark, who was for many years the Secretary of the Leeds Horticultural Society, has undertaken the management of the Show. Mr. Joseph Davis is the General Manager of the permanent Exhibition.

— ALEXANDER AND WATERLOO PEACHES.—A correspondent who had trees of these varieties from Mr. Rivers says the former is a freestone, the latter more of a clingstone and much the darker in colour of the two. The fruits of Alexander that we have seen were

clingstones. Another good Peach-growing gardener regards the two varieties as practically the same. Can any of our readers reconcile the differences of opinion that appear to exist on those points?

— ROSE BLOOMS.—Mr. Frank Cant, Braiswick, Colchester, sends us a box of fine Rose blooms comprising some good varieties, but the flowers had suffered somewhat in transit.

— GARDENERS' ORPHAN FUND.—The usual monthly meeting of the Committee took place at the Caledonian Hotel on the 27th ult., Mr. John Laing presiding. The minutes of the last meeting having been read, the Hon. Secretary laid upon the table a balance-sheet of receipts and expenditure of the recent Covent Garden Floral Fête, showing a clear gain of £173 8s. 7d. A draft report of the Committee and balance-sheet for presentation at the annual general meeting was read and adopted. Several matters of detail connected with the annual meeting and dinner were completed, and a cheque for the quarter's allowances to children on the Fund, amounting to £65, was ordered to be drawn. The third annual general meeting of subscribers will take place at the Cannon Street Hotel, E.C., at 2 P.M. on the 18th inst., and the annual dinner at 5 P.M., Mr. Shirley Hibberd presiding.

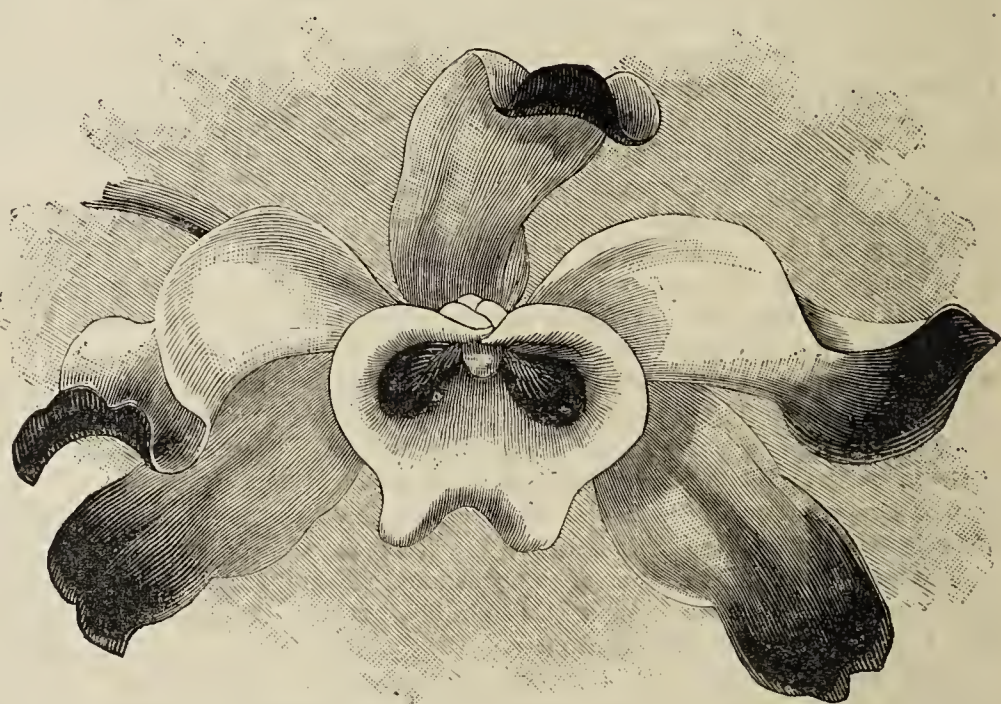


FIG. 4.—DENDROBIUM WARDIANUM. BARON SCHRÖDER'S VARIETY.

— ATTENDANCES AT FLOWER SHOWS.—A correspondent writes, in answer to the inquiry if any show has an attendance in two days larger than 47,000, that at Shrewsbury Floral Fête in 1888 43,000 visitors attended the second day alone, and about 11,500 on the first day, making a total of nearly 55,000 in two days, the receipts being nearly £2800. Last year both days of the Show were unfortunately very wet, yet 45,000 visitors were present, the total receipts being nearly £2500.

— BIRDS, CATERPILLARS, AND POISON.—I observe the Americans use bisulphide of carbon as an insecticide, and Professor Cook says it is the best known. For some years the sparrows have kept the Gooseberry caterpillar down in my garden. Previously I kept them under by using a little hellebore before the eggs were deposited. I never saw a caterpillar upon a bush that I had sprinkled with the powder. The hedge sparrows exterminated the "borers." After these birds were destroyed I kept them under by tapping the bushes with a stick, then as they dropped by their silken threads I killed them. Not many years since I saw acres of pasture completely destroyed by caterpillars, which followed immediately on the season after the timber of a large wood was cut. Orchard trees and bushes may be sprayed with insecticides, but it is, I fear, impracticable to do so with trees in extensive forests. Birds must, to a great extent, be the agents in these. Prevention is the proper course if it can be attained. Killing caterpillars in many cases is killing them after the work of destruction is done. If the spraying of fruit trees with insecticides would have the same effect as the hellebore had with the Gooseberry caterpillar, then the problem would be solved, but it would be absolutely necessary to do this annually, or perhaps several times annually. Proprietors would do well to make a plantation or two suitable for the breeding and preservation of insect-eating birds near both plantations and orchards.—W. T.

— DEATH OF MR. GEORGE DEAL.—It is with deep regret that we have to announce the death of Mr. George Deal, who was for many years a prominent figure in the horticultural world. The sad event took place on the 30th ult., a few days after his fifty-sixth birthday. Mr. Deal's condition had for some time been watched with considerable anxiety, as he was seized with an apoplectic stroke on the 9th of April, and gradually declined until his death. He was connected with the firm of J. Weeks & Co. for thirty-three years, entering their service when quite young, and becoming a member of the firm twenty-two years ago. Mr. Deal enjoyed the deep respect and esteem of his partners and employes, and also of a very large circle of horticultural friends and acquaintances. He was Chairman of the Gardeners' Orphan Fund from the date of its establishment, and did invaluable work for that Institution, invariably displaying the utmost zeal, attention, and courtesy in his labours on its behalf. The deceased gentleman leaves a widow, but no children. The funeral will take place on Saturday, July 5th, the cortège leaving his residence, Wroxton Grange, Mount Park Road, Ealing, at 9.15 A.M., and journeying from the Necropolis Funeral Co.'s station, Westminster Bridge Road (near Waterloo station), at 11.45 A.M. for Woking Cemetery.

— It is also with much regret that we have to announce the DEATH OF MR. FRANCIS DANCER, late of Little Sutton, Chiswick, which happened on the 29th ult., at 21, Gordon Road, Ealing, in the 75th year of his age. Mr. Dancer was one of the noted market gardeners of Middlesex, and was for many years a prominent figure at the meetings of the Royal Horticultural Society, of the Fruit Committee of which he was for several years a member.

— WE have heard with much pleasure that MR. RICHARD SMITH-CARINGTON, who is this year Mayor of Worcester, has become the possessor by purchase of the estate and manor of Ashby Folville in Leicestershire, the ancient seat of the original Lords Carington.

— THE BIRMINGHAM BOTANICAL GARDENS.—There is invariably something of interest to be noticed here, as cultivation receives so much attention. During a hasty run through the houses recently I noticed two large plants trained to the roof of *Cereus Macdonaldiae* with large flower buds ready to expand, but as this plant flowers only at night I did not see it in full bloom, as it expands in the evening and closes early in the morning. The flowers are of a creamy white colour, and quite 14 inches in diameter when expanded. *Hoya globulosa*, trained across the rafters in the same intermediate house, was in full bloom, a strongish grower like *H. imperialis*, with cream-coloured very fragrant flowers, and very free blooming. Several plants of a new variety of *Spiraea japonica* are in flower, the spikes or plumes being larger and denser and decidedly superior to the old *S. japonica*. Mr. Latham was not certain as to its correct name. It looks like a plain-leaved *Hoteia japonica variegata* in growth, and I am wondering if it is the *Spiraea compacta multiflora* one of the Dutch growers is offering.

— SEVERAL ORCHIDS were in flower, amongst them the very pretty small growing *Oncidium uniflorum*, pale yellow with brown markings; *Nanodes Medusæ*, a South American plant, and a cool house Orchid, with a singular flower with a broad ciliated labellum, and of a dark cinnamon colour, the plant having a squat trailing habit, and very interesting. A fine collection of *Cypripediums* is grown here, and amongst several in flower is a plant of the very fine *C. Curtisi*, a distinct species, with a large broad pouch. We rarely meet with *Crossandra undulæfolia*, an East Indian stove plant of rare beauty, with flowers very much like *Lychnis Haageana* in colour. It is closely allied to *Aphelandras*, a plant of smallish growth and easy culture. There is a good specimen of *Godwinia gigas*, a striking Aroid from Nicaragua, with a 4-feet long stalk curiously marked. A plant in bloom of the beautiful but seldom seen *Philcsia buxifolia* was a welcome sight. Hardy herbaceous plants are well cared for, but I had not time to see the general collection. Against the plant houses on the borders are many beautiful species of *Cistus*, and other less hardy plants here in this part of the midlands. Amongst those now in flower *Olearia macrodonta*, with handsome strongly toothed foliage, and corymbs of small white Aster-like flowers. This plant has been in the position it now occupies for five years. Close by is a plant of *Eurybia Gunni*, a small growing shrub, with dense clusters of small Michaelmas Daisy-like white flowers.—D.



BATEMANNIA WALLISI.

THE Batemannias and some of their relatives have been rather neglected by Orchid growers in recent years, chiefly because they have been found difficult to manage successfully, and no one likes to be troubled with plants that have perpetually a weakly or unhealthy appearance. Perhaps the key to the successful culture of these plants is to be found in affording a plentiful supply of water during the time the plants are growing, and in shading them constantly from the sun. Under such conditions as these Batemannias flourish in several well-grown collections of Orchids, and the



FIG. 5.—BATEMANNIA WALLISI.

distinct character of the flowers renders them especially worthy of attention.

An example of a new species was shown by Messrs. F. Sander and Co., St. Albans, at a meeting of the Royal Horticultural Society's Orchid Committee on June 10th last, and a first-class certificate was awarded for it. The plant was a strong one, indicating that Batemannias, like all other Orchids, are extremely well grown at St. Albans. It had one large flower (fig. 5) 4 inches in diameter. The sepals and petals hard, thick, fleshy, with a peculiarly warted but highly polished surface. The apical half of each sepal and petal is a rich glossy brown, the base white, the petal having two dark spots in the centre. The lip is white and fringed at the base, tipped with brown, and the column is also coarsely serrated. The flower has an effective appearance.

DENDROBIUM WARDIANUM, BARON SCHRÖDER'S VARIETY.

Many fine varieties of *Dendrobium Wardianum* have been introduced, but that of which a flower is depicted in fig. 4 is one of the best, and in some respects the most handsome yet obtained. It was shown early in the present year, and formed one of the special attractions of the meeting.

The flowers are of great size and substance, the sepals and petals heavily tipped with intensely rich crimson; the sepals are deeply flushed with a lighter shade of crimson, but the pure white of the basal portion of the petals brings the colouring into fine relief. The lip is broad and rounded, but indented at the tip,

having two maroon blotches at the base, then yellow and white zones and a crimson tip.—L. CASTLE.

ROYAL HORTICULTURAL SOCIETY.

JUNE 24TH.

SCIENTIFIC COMMITTEE.—Present: Dr. Masters in the chair; Mr. Wilson, Rev. C. W. Dod, Mr. McLachlan, Professor Church, Dr. Oliver, Mr. Michael, Mr. Pascoe, Dr. Müller, and Rev. G. Henslow, Hon. Secretary.

Iris reticulata, protection against Mildew upon.—Rev. C. W. Dod described his experiments of dusting the bulbs of this Iris with flowers of sulphur before planting them, as well as the ground where they were placed, in August, 1889. The remarkable effect was to arrest all attempts at growth, the bulbs being this year exactly in the same state as when planted. Professor Church suggested that the cause of the arrest might be due to a slow oxidation of the sulphur, producing sulphurous acid, which could be absorbed by the tissues, coupled with a consequent deprivation of oxygen necessary for the development of roots.

Blight.—Mr. Wilson remarked on the excessive prevalence of blight this year, *Iris Kämpferi* being for the first time attacked by thrips.

Datura Leaves, diseased.—Dr. Masters exhibited some leaves with small spongy-like processes by the ribs, &c. They were referred to Dr. Oliver for examination and report.

Spanish Iris with Supernumerary Parts.—Dr. Masters exhibited some flowers with four petals instead of three, and one with a four-celled ovary. The multiplication of parts had followed the chorisis or bifurcation of the fibrovascular cords of the organs in question.

Bigener (?) between Raspberry and Strawberry.—Dr. Masters exhibited drawings of the flower of this remarkable plant, which Mr. Culverwell has raised. It is generally known as *Rubus Leesii*, *Bab*. The pedicel and sepals are finely setose, but it wants the epicalyx of the Strawberry. Moreover, the carpels of the hybrid are setose and not glabrous. They appear to be abortive. Prof. Babington in his *Manual of British Botany* records it as being found at Ilford Bridges, Devon, and Dunster, Som., with a reference to "A. N. H., ser. 2, ix., 124."

Hybrid between the Black Currant and Gooseberry.—He also showed drawings of various organs of this hybrid, also received from Mr. Culverwell. The foliage more nearly resembles that of the Gooseberry, being glabrous, except along the nerves of the under surface. The petiole, however, is glabrous and not hairy as in the Gooseberry. It has no glands as the Black Currant. The inflorescence is a many-flowered raceme, intermediate in length between the many-flowered Currant and the few-flowered Gooseberry. The flowers are larger than those of either parent, with the sepal lobes erect and not reflexed as in them. The stamens are contabescent, and the style is villous in the middle, whereas those of the parents are glabrous. The stigma or apex of the style is deeply cleft, those of the parents being sub-capitate and obscurely two-lobed.

Laelia, two-lipped.—Dr. Masters also showed the not uncommon production of two labella in this Orchid. It is probably due to chorisis.

Antirrhinum, with viresecent corolla.—He exhibited a specimen with the corolla in the form of a calyx, but undertook to examine it further and report upon it.

Bigener Orchid.—Mr. Veitch exhibited an interesting plant called *Epiphronitis Veitchi*, being a bigener between *Epidendrum radicans*, the male parent, and *Sophronis grandiflora*, the female. It received a first-class certificate, and was unanimously awarded a botanical certificate by the Scientific Committee.

Caleolaria, dying off.—Mr. Henslow showed plants which had suddenly died in his garden. They had decayed in the lower part of the stem, having the cortex split for a length of about an inch. Mr. Wilks said he was familiar with the fact, and attributed it to the plants having first suffered from drought and then being overwatered, the sap was thus unable to rise and burst the tissues. Mr. Henslow observed that this interpretation corresponded with the conditions of the case in question. It was a small crimson-flowered variety with hairy foliage. The common yellow coloured species showed no signs of injury whatever.

Pistacia Lentiscus, Galls on.—Mr. Henslow exhibited branches of this plant from Malta covered with flat galls formed from the metamorphoses of the leaflets, which had assumed a "leguminous" shape. It is not uncommon in the Mediterranean regions. Mr. McLachlan observed that at least four species of aphides make galls on the *Pistachia*. Mr. Dod observed that Cicero speaks of the *Lentiscus* bearing fruit thrice a year; but that this was probably to be explained by the gum being collected three times annually.

Orange, Pistilody of Stamens in.—Mr. Henslow showed specimens of this malformation. It was well known before, but, as Dr. Oliver observed, it appears to be rather more common than usual during the present season.

Caprificus, or Wild Fig.—Mr. Henslow showed fruits of the Wild Fig from Malta, used by the peasants for "caprification" or fertilisation of the autumn varieties of cultivated Figs. Unlike the latter, the Wild Fig called "Duccar," invariably grows in walls or crevices of the rocks. It produces three crops per annum, each supplying a brood of the *Blastophaga*. The Fig is not required for the summer or "St. John's" Fig, which ripens about the end of June, the 24th being St. John the Baptist's Day, as this Fig contains both male and

female blossoms. Mr. Henslow could find no male blossoms at all in the first or winter crop of the Duccar. It is not known whether the autumn Figs are entirely female or not, but a Maltese botanist, Signor Gatto, has undertaken to make a thorough investigation upon this and other as yet obscure points involved in the caprification in Malta, as it appears to differ in some respects in other countries.



ROSE SHOW FIXTURES, 1890.

- July 3rd.—Bath, Farningham, Norwich.
 „ 5th.—Crystal Palace (N.R.S.).
 „ 8th.—Gloucester, Ipswich, *Winchester.
 „ 9th.—*Brigaton, Diss, Ealing, Tunbridge Wells.
 „ 10th.—Birkenhead, Woodbridge, Worksop.
 „ 11th.—Ulverston.
 „ 12th.—New Brighton.
 „ 15th.—Christleton.
 „ 17th.—Birmingham (N.R.S.), Helensburgh.
 „ 22nd.—Tibshelf.
 „ 24th.—Salterhebble (Halifax).
 Aug. 2nd.—Ripley.

* In the case of Brighton and Winchester, where the Shows extend over more than one day, the date of the first day's exhibition only is given.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

MANNERS AND CUSTOMS OF ROSES.

MR. RAILLEM'S notes on "Manners and Customs" have been very useful to me, particularly by reason of their hints as to which Teas do best as dwarfs and which as standards. I should therefore be glad to hear that he is likely to continue these notes to the end of the list of foremost Teas, but if this is not practicable, I shall feel obliged if he will be good enough to inform me whether the dwarf or the standard is the better mode of growing the following:—*Perle des Jardins*, *Princess Beatrice*, *Rubens*, *Souvenir d'Elise*, *Souvenir d'un Ami*, and *The Bride*. I grow all these, but do not succeed with them, and if you allow me to ask the question, and if Mr. Raillem will kindly reply through your columns, my indebtedness to the Journal and to these "notes" will be greatly increased.—J. B.

ROYAL AQUARIUM, WESTMINSTER.—JUNE 27TH AND 28TH.

THE first of the more important Rose Exhibitions in and near the metropolis opened under favourable auspices at the Royal Aquarium on the above dates. The weather, after a heavy morning shower, was most pleasant, and bright anticipations were formed of the coming season when the quality of the flowers was noted. The recent rains appear to have brought on the blooms well, and collectively considered they were excellent, size and form being good, with true, fresh and lustrous colour. Many famous names were found amongst the entries. Mr. B. R. Cant, Messrs. Paul of Cheshunt, Burrell, Burch, Keynes, Williams & Co., Cooling, Prince, and Prior were representatives of the trade; and Messrs. Burnside, Pemberton, Berners, Foster-Melliar, Lindsell, and Slaughter may be instanced among the amateurs. With these names quality is usually associated, and the display on the present occasion was of a high order.

The awards of the Judges, with some notes on the individual exhibits, are appended.

NURSERYMEN.

The principal class for forty-eight blooms, single trusses, with prizes of £6, £5, £3, and £2, proved an excellent one, the entries being numerous, and the quality of the blooms of a high character. Mr. B. R. Cant, the famous Colchester grower, was placed first for a very fine and even stand, containing several very noteworthy blooms, and all were fresh and well coloured. He showed the following varieties:—Back row: *Lady Mary Fitzwilliam*, *François Michelin*, very large and fine; *Merveille de Lyon*, *Maurice Bernardin*, *Madame Cusin*, very large but coarse; *Etienne Levet*, *Baronne de Rothschild*, *Sénateur Vaisse*, *Her Majesty*, *Mons. Triévoz*, *Marguerite de St. Amand*, *Magna Charta*, *Souvenir d'un Ami*, *John Hopper*, *Souvenir d'Elise*, splendid; and *Ulrich Brunner*, large and very richly coloured. Middle row: *Victor Verdier*, *Marie Verdier*, *Madame Ducher*, *Madame Gabriel Luizet*, *Susanne Marie Rodocanachi*, *Viscountess Folkestone*, *Dupuy Jamain*, *Madame Désir*, *A. K. Williams*, very good; *La France*, *Duke of Wellington*, *Maréchal Niel*, *Duke of Edinburgh*, *Mrs. John Laing*, beautiful; *Marie Baumann*, and *Pride of Waltham*, very fine. Front row: *Madame Hoste*, *Général Jacqueminot*, *Madame Willermoz*, *Alfred Colomb*, *Niphetos*, *Le Havre*, *Innocente Pirola*, *Madame C. Joigneaux*, *Marie Van Houtte*, splendid; *Prince Arthur*, *Catherine Mermet*, *Boieldieu*, *Cleopatra*, *Victor Hugo*, *Marie Verdier*, and a beautiful example of *Madame de Watteville*. The English Fruit and Rose Company (Cranstons), King's Acre, Hereford, were second with a good but somewhat uneven stand, the best flowers being *Le Havre*, *Ulrich Brunner*, *Etienne Levet*, *John Stuart Mill*, *Duke of Edinburgh*, and *Madame Charles*.

Wood. Messrs. Paul & Son, the Old Nurseries, Cheshunt, were a good third, their flowers being fresh and finely coloured, though lacking size. Messrs. D. Prior & Son, Myland Nurseries, Colechester, were fourth, two others competing.

Messrs. Keynes, Williams & Co., Salisbury, were to the front in the class for thirty-six blooms, showing the following:—Back row: Lady Mary Fitzwilliam, François Michelin, La France, Star of Waltham, Countess of Pembroke, Madame Chas. Wood, Mrs. John Laing, Sénateur Vaisse, Madame Gabriel Luizet, Etienne Levet, Her Majesty, and Ulrich Brunner, the three last being very fine. Middle row: Constantine Tretiakoff, Niphetos, Horace Vernet, Mons. Noman, François Levet, Madame de Watteville, Heinrich Schultheis, Souvenir d'Elise, Marie Baumann, Jean Ducher, Madame C. Joigneaux, and Maréchal Niel. Front row: Catherine Mermet, Madame Alphonse Lavallée, Francisca Krüger, Alfred Colomb, Amazone, Duke of Wellington, The Bride, Comtesse d'Oxford, Comtesse de Nadaillac, Duke of Edinburgh, Souvenir d'un Ami, and A. K. Williams. Close in the rear came Messrs. Cooling & Sons, Bath, who had a capital stand, with excellent examples of Lady Mary Fitzwilliam, François Michelin, Her Majesty, Mons. Noman, and Mrs. J. Laing. Messrs. G. & W. H. Burch, Peterborough, were third with smaller but well finished flowers, and Messrs. Burrell and Co., Howe House, Cambridge, fourth, several others competing. Mr. B. R. Cant was once more successful with twenty-four trebles, an even, fresh, and finely coloured stand, comprising in the back row: Ulrich Brunner, Her Majesty, Prince Arthur, Merveille de Lyon, Baronne de Rothschild, Duke of Edinburgh, La France, Alfred Colomb, François Michelin, Lady Mary Fitzwilliam, Etienne Levet, and Mrs. John Laing. In the front: Pride of Waltham, Général Jacqueminot, Souvenir d'Elise, Victor Hugo, John Hopper, Souvenir d'un Ami, Dupuy Jamain, Marie Verdier, Innocente Pirola, A. K. Williams, Violette Bouyer, and Marie Baumann. The English Fruit and Rose Co. were placed second with a fresh and even lot, comprising only one or two faulty blooms, and many of considerable excellence. Messrs. Paul & Son, Cheshunt, were third, and Mr. C. Turner, Slough, fourth. There were eight stands in all, so that this was an extensive display.

AMATEURS.

Six exhibits of thirty-six blooms, single trusses, represented the amateurs in the principal class, and they showed in excellent form in nearly every instance. Mr. Jordan, gardener to the Rev. Hugh A. Berners, Harkstead Rectory, Ipswich, scored a very creditable victory, his blooms being very fresh, even, and well coloured. In the back row he had Ulrich Brunner, Madame Willermoz, Star of Waltham, Captain Christy, Mrs. J. Laing, Duke of Edinburgh, La France, A. K. Williams, Catherine Mermet, Marquise de Castellane, Her Majesty, and Madame Isaac Péreire. In the middle row, Lady Mary Fitzwilliam, Heinrich Schultheis, Anna Ollivier, Duke of Teck, Merveille de Lyon, Madame Gabriel Luizet, Dupuy Jamain, Innocente Pirola, Etienne Levet, Viscountess Folkestone, Le Havre, and Mdlle. Marie Cointet. In the front row, Duke of Connaught, Comtesse de Nadaillac, Marie Finger, Gloire Lyonnaise, François Michelin, Rosieriste Jacobs, Hon. Edith Gifford, Crown Prince, Violette Bouyer, Earl of Dufferin, Madame Cusin, and Jean Soupert. Mr. Bradbury, gardener to S. P. Budd, Esq., 46, Brooklyn Road, Bath, had a fine example of Mrs. J. Laing, a beautiful Charles Lefebvre, and a splendid bloom of Le Havre amongst other noteworthy flowers in his second prize stand, which was in every respect an excellent one. Mr. N. Slaughter, Jarvis Villa, Steyning, was a good third, and Mr. R. S. West, Reigate, fourth. The Rev. A. Foster-Melliar, Sproughton Rectory, Ipswich, won with twenty-four singles, a good collection with only one or two weak flowers. The varieties were as follows:—Back row: Heinrich Schultheis, Captain Christy, Alphonse Soupert, Lady Mary Fitzwilliam, Marie Verdier, Marie Finger, Dr. Andry, and Madame Verdier. Middle row: A. K. Williams, Madame Isaac Péreire, Germaine Caillot, Etienne Levet, Pride of Waltham, Mrs. Baker, Marguerite de St. Amand, and Marquise de Castellane. Front row: Baronne de Rothschild, Rosieriste Jacobs, Charles Lefebvre, Duchesse de Vallombrosa, Countess of Rosebery (very fine), Mrs. Harry Turner, Mons. Noman, and La France. The Rev. J. H. Pemberton, Havering, Romford, had a good stand also, amongst the best flowers being Lady Mary Fitzwilliam, A. K. Williams, and Madame Lambard. Mr. E. B. Lindsell, Hitchin, was third with fresh but small flowers, and Mr. J. G. Fowler, Woodford, Essex, was fourth. Mr. E. Wilkins, Lyndhurst, Sutton, had the best twelve singles—namely, Etienne Levet, Madame Isaac Péreire, Dupuy Jamain, Comtesse d'Oxford, Countess of Rosebery, La France, La Rosière, Marquise de Castellane, Victor Verdier, Prince Arthur, Madame Gabriel Luizet, and Maurice Bernardin; Mr. H. Foster, Ashford, being second, Mr. G. P. C. Burnand third, and Mr. J. Bateman, Highgate, London, N., fourth. Mr. Lindsell was victorious with twelve triplets, showing Dupuy Jamain, Duchess of Vallombrosa, Mons. Noman, Duke of Wellington, Violette Bouyer, Mrs. J. Laing, Lady Mary Fitzwilliam, Anna Ollivier, Charles Lefebvre, A. K. Williams, Madame Gabriel Luizet, and Marquise de Castellane. Some of these were small, but they were beautifully finished, and formed a capital stand. Mr. Slaughter was second, Mr. Jordan third, and the Rev. A. Foster-Melliar fourth.

TEAS AND NOISETTES—NURSERYMEN.

The Tea classes formed a beautiful display in St. Stephen's Hall, though this building is not light enough for showing Roses to advantage. The class for eighteen varieties, three trusses of each, brought out some beautiful blooms, and resulted in a victory for the well known Oxford grower, Mr. George Prince, whose flowers were in the usual per-

fect condition in which he shows Teas. The varieties were as follows:—Back row: Souvenir de S. A. Prince, Souvenir d'un Ami, Souvenir d'Elise, Maréchal Niel, Innocente Pirola, Comtesse de Nadaillac, splendid bloom, best in the stand; Hon. Edith Gifford, Jean Ducher, and Cleopatra. Front row: Princess of Wales, Alba rosea, Francisca Krüger, La Princesse Véra, Catherine Mermet, The Bride, Anna Ollivier, Marie Van Houtte, and Rubens, very fine. Mr. B. R. Cant, Colechester, followed with a stand worthy of his reputation, his Rubens, Anna Ollivier, Madame Hoste, Madame de Watteville, and Madame Cusin being very fine. Messrs. D. Prior & Sons had some good flowers in their third prize stand, though they had suffered somewhat from the rain. Messrs. Keynes, Williams & Co., Salisbury, were fourth, one other competing. Eighteen single blooms brought a beautiful stand from Mr. B. R. Cant composed of the following:—Back row: Madame Bravy, Madame de Watteville, Madame Willermoz, Catherine Mermet, Souvenir d'un Ami, deeply coloured; and Souvenir d'Elise, a charming bloom. Middle row: Francisca Krüger, Maréchal Niel, Ernest Metz, Marie Van Houtte, Madame Cusin, and Niphetos. Front row:—Hon. Edith Gifford, Ethel Brownlow, Caroline Kuster, Amazone, Innocente Pirola, and Madame Lambard, the latter excellent. Mr. Prince followed closely, his best flower being a magnificent Comtesse de Nadaillac, perfect in form save for two of the base petals, and charmingly fresh. Rubens and Alba rosea were also good. Messrs. Burrell & Co. had smaller but very fresh, clean, bright flowers, Messrs. Keynes, Williams and Co. being selected from the remaining five exhibitors for fourth prize.

AMATEURS' TEAS.

The Rev. F. R. Burnside had a very neat stand of twelve trebles, composed of Madame Cusin, Innocente Pirola, Maréchal Niel, Jules Finger, Jean Ducher, Hon. Edith Gifford, Souvenir de Gabrielle Drevet, Marie Van Houtte, Souvenir d'un Ami, Rubens, and Madame Bravy, the majority being somewhat small, but in excellent condition. A very good stand came from Mr. Jordan (gardener to the Rev. Hugh A. Berners); indeed, they pressed Mr. Burnside very closely; Anna Ollivier, Catherine Mermet, Princess of Wales, and the Hon. Edith Gifford were amongst the best. Mr. R. Bonnett, gardener to the Rev. W. H. Jackson, Stagsden Vicarage, Bedford, was third; and Mr. A. Slaughter, Jarvis Villa, Steyning, fourth. Twelves in single trusses brought nine charming stands, the best being a beautiful box from Mr. Jordan. The varieties were Souvenir d'Elise, Madame de Watteville (very fine), Innocente Pirola, Comtesse de Nadaillac, Princess of Wales, Anna Ollivier, Catherine Mermet, Madame Caroline Kuster, The Bride, Amazone, the Hon. Edith Gifford, and Francisca Krüger. These were all charming flowers. Excellent, too, were Mr. Burnside's second prize blooms, Comtesse de Nadaillac, Anna Ollivier, and Hon. Ethel Brownlow being the best. The Rev. A. Foster-Melliar had a capital stand, and so had Mr. E. B. Lindsell, Hitchin, who were respectively third and fourth; indeed, there was something to admire in all the boxes.

OPEN CLASSES.

With twelve single trusses of any yellow Rose Mr. Burnside won, showing Anna Ollivier. With three exceptions the flowers were very good, and well deserved the award. Mr. S. G. Rumsey, Wrotham, Kent, was second with the same variety, very neat and fresh; and Mr. B. R. Cant was third with Maréchal Niel. The corresponding class for whites saw Mr. B. R. Cant to the fore with Innocente Pirola. His flowers were large and fine, but showing the effects of the weather. Messrs. Keynes, Williams, & Co. were second with a clean fresh lot of Niphetos; and Mr. G. Prince third with Souvenir de S. A. Prince; a special award falling to Mr. Burnside for a neat stand of Souvenir d'Elise. Crimsons were best shown by Mr. B. R. Cant, this noted grower winning well with a capital stand of A. K. Williams, deeply coloured; Messrs. D. Prior & Son were second with Ulrich Brunner, medium size, fresh, bright, and clean; and Mr. Bradbury third with the same variety. The English Fruit and Rose Co. won with twelve of any H.P., showing enormous examples of Ulrich Brunner, one of the finest lots ever exhibited, although one or two flowers were somewhat coarse; Messrs. Cooling & Sons were second with a beautiful box of Mrs. John Laing, fresh and bright; and Mr. E. Wilkins was third with Chas. Lefebvre. There were upwards of twelve in competition. The corresponding Tea class saw Mr. Prince victorious with Comtesse de Nadaillac, fresh and finely coloured; Mr. Jordan was second with Souvenir d'Elise; Mr. R. B. Cant third with the same variety; and Messrs. Keynes, Williams, and Co. received a special award for a delightful stand of Catherine Mermet.

Moss and Provence Roses had one class provided for them, and this filling well proved extremely interesting. Messrs. Paul & Son, The Old Nurseries, Cheshunt, had a charming box composed of the Moss varieties Blanche Moreau, Crested, Common, Angelina Quetier, Julie de Masant, Perpetual White and Baron de Wassenaer, with the Provence Roses Mercedes, Common and White. Mr. Prince came second, also with a bright and fresh display, and Messrs. Cooling & Sons were third.

Vases, bouquets and baskets of Roses were a beautiful display. Messrs. Perkins & Sons, Coventry, showed their usual mastery of bouquet making by their exhibit in that class and were placed first. They also won with a basket, perfectly arranged and finished. Mr. J. R. Chard, Stoke Newington, was first for epergnes. Minor prizes in these classes went to Mr. Chadwick, gardener to E. M. Nelson, Esq., Ealing, Mr. D. B. Crane, Highgate, London, N., and Mr. G. Mount, Canterbury.

Amongst noteworthy miscellaneous exhibits of Roses was a splendid display of Polyantha, single and buttonhole Roses, from Mr. C. E.

Cuthell, Dorking. A fine collection of garden Roses came from the Rev. J. H. Pemberton, and a box of cut blooms from Mr. W. Tayler, Hampton. Blooms of a beautiful new Bourbon named Mrs. Paul came from Messrs. Paul & Son, Cheshunt. The flower is large, as beautifully formed as a Camellia, and of a soft blush hue. A first-class certificate was awarded. A fine collection of blooms came from the English Rose and Fruit Company, and Mr. W. Rumsey, Joynings Nurseries, Waltham Cross, also had an extensive and varied display.

REIGATE SHOW.

THE annual Rose Show was held on June 28th. In spite of the late frost and inclement weather it was one of the best ever held, the best box in the Show, Mrs. Waterlow, which took the President's R.H.S. medal, containing faultless Roses, and there being a very general excellence throughout the exhibits. The President, Mr. T. B. Haywood, took the N.R.S. bronze medal with a large and exquisitely coloured Marie Baumann as the best Rose not Tea or Noisette, and the Rev. A. Foster-Melliar the bronze medal for the best Tea, Comtesse de Nadaillac. The prizetakers were as follows:—Open classes: Twenty-four varieties.—First, Mr. Frank Cant; second, Mrs. Waterlow; third, Mr. T. B. Haywood. Twelve Teas (five boxes).—First, Mrs. Waterlow; second, Mr. Frank Cant; third, Mr. B. Cant. Mr. F. Cant showed a marvellous Prince Arthur, and an almost equally fine Souvenir d'un Ami. Twenty-four varieties, members only (seven boxes).—First, Rev. A. Foster-Melliar; second, Mr. R. D. West; third, Mr. E. B. Lindsell; commended, Mr. Slaughter. Six triplets.—First, Mr. Lindsell; second, Rev. F. R. Burnside; third, Mr. Slaughter.

Twelve Teas (members).—First, Rev. A. Foster Melliar; second, Rev. F. R. Burnside; third, Mr. Lindsell. Twelve varieties (eleven boxes).—First, Mr. Wilkins; second, Rev. A. Cheales; third, Mr. Mawley. Nine Teas (eight boxes).—First, Mr. Mawley; second, Mr. Cuthell; third, Rev. A. Cheales. Four triplets (nine boxes).—First, Mr. Wilkins; second, Miss Baker; third, Mrs. F. C. Pawle. Six varieties (three boxes).—First, Mr. Graham; second, Mrs. Hatch; third, Mr. Freshfield. Six Teas (three boxes).—First, Mr. Graham; second, Mr. Freshfield; third, Mrs. Hatch.

Table decorations for six persons.—First, Mrs. Fearon, with a pleasing combination of Poppies, Grasses, and Honeysuckle; second, Miss M. E. Nichols, Irises, Copper Peach leaves, some Poppies. Rose device.—First, Miss G. Baxter. At the close of the judging the Committee, Judges, and other friends were hospitably entertained by the President at his residence at Woodhatch.

NATIONAL PINK SOCIETY.

JUNE 27TH.

THE first Show of the above Society was held in conjunction with the Rose Show at the Royal Aquarium on Friday last, a varied and interesting display being provided. The beautiful laced Pinks well deserve a larger share of public favour, and the dozen classes devoted to them proved that an exhibition can be obtained for moderate prizes of scarcely less interest than the Carnations and Picotees afford at a later date.

The chief class was for twenty-four blooms in not less than twelve varieties, in which Mr. C. Turner, Slough, was first for fine clean examples of the following varieties:—Boiard, Rosy Gem, Minerva, The Rector, Bertram, Hebe, Exeelsior, Modesty, Henry Hooper, Empress of India, and Eurydice. Mr. Hooper of Bath was placed second. With twelve blooms Messrs. Turner and Hooper were again the winners in the same order, the best blooms in the first stand being Boiard, Modesty, Devise, The Rector, Minerva, and Empress of India. Messrs. Turner, Hooper, and J. Lakin, Oxford, were the prizewinners for six varieties, as they also were for six blooms in three varieties.

The border Pinks were good, but the competition, as in the other classes, was very limited. Mr. Hooper had the best twelve, Her Majesty, Nora, Charmer, and Oliver being noteworthy varieties. Mr. R. Dean was second. Mr. Hooper was also first for six border Pinks, Mr. Turner taking a similar place for the best bunch, one variety, with Anna Boleyn; Messrs. E. R. Johnson's and Mr. J. Thurston's prizes being also won by Mr. C. Turner and Mr. Hooper.



FRUIT FORCING.

FIGS.—*Early House*.—As the first crop will be all gathered more moisture will be desirable, therefore resume the syringing twice daily, damping available surfaces whenever they become dry. Thin the fruit for the second crop freely, reserving those which are nearest the base of the shoots, as they finish most satisfactorily, and do not prejudice the ripening of the points of the shoots, which, to insure a full first crop another season, must be kept well up to the light. Tie the growths to the trellis as they advance, stopping or removing such as are not required,

regulating those retained so that they may receive the beneficial effects of light and air to mature them perfectly. Do not allow the trees to suffer by want of water; those in borders of limited extent will require watering freely and frequently, affording on every occasion liquid manure, or a little artificial manure may be sprinkled on the border and washed in.

Fruit Ripening.—Where crops are ripening maintain a free circulation of air, enough by night as well as by day to insure evaporation from instead of moisture condensing on the fruit, as in a close atmosphere and moisture pervading the air to the same extent as when the fruit is swelling it will be poor in flavour and be seriously disfigured and spoiled by cracking, indeed Figs ripened in a stuffy atmosphere have a most unpleasant musty flavour. Although less moisture in the soil is desirable when the fruit is ripening, it must not be allowed to become parchingly dry, or the trees will suffer. If necessary afford fire heat to maintain a night temperature of 65°, and 70° to 75° by day, a gentle warmth in the pipes being necessary in dull weather in order to admitting a free circulation of air.

Trees in Pots for Early Forcing.—Young trees intended for starting in November to afford fruit in April and early May next year must have every opportunity of making and completing growth, the foliage not being crowded either by the plants standing too close together or the growths suffered to remain too thick. Every part must be well exposed to light, and air freely admitted, in order to a thorough solidification of the growth and the storing of as much assimilated matter as possible in the wood, which in measure determines the degree of fruitfulness and the retention of the fruit. The foliage also must be kept clean by judicious but not over-syringing, always have recourse to it early enough to allow the foliage to become dry before nightfall. Water must be given as required to the roots, affording a little stimulant—indeed liquid manure on every occasion.

VINES.—*Early Houses*.—Vines from which the Grapes have been cut must be well syringed every evening until the foliage is thoroughly cleansed of red spider and dust, afterwards recurring to it occasionally so as to keep the old foliage as long as possible in a healthy condition, for when the foliage dies early from red spider, lack of moisture at the roots, or other cause, second growth not unfrequently sets in when they ought to be going to rest. Admit air to the fullest possible extent, maintaining a moderate degree of moisture in the borders, particularly at the surface, so as to keep the roots there instead of allowing it to become dry, and so causing them to descend in quest of moisture. A moderate extension of the laterals will not do any harm, but good in keeping the sap active, and so preventing early maturity, the loss of the leaves corresponding to the pruning buds; but irregularities, and particularly gross ones, should be checked by pinching or entirely removed. Weakly Vines may be assisted to develop their buds by an application of liquid manure.

Pot Vines for Early Forcing.—Neglect in syringing will bring red spider, and negligences in affording water and aliment to the roots bring off the leaves prematurely, therefore syringe if necessary to keep the foliage clean and healthy, exposing it to all the light practicable, ventilating freely. Liquid manure should be given at every watering. Those that have completed their growth should now have less moisture, syringing being discontinued, and the supply of water at the roots moderate, air being freely admitted, keeping the foliage well up to the glass.

Grapes Ripening.—Atmospheric moisture to a fair amount is necessary, as its withdrawal causes evaporation to an extent causing the berries to shrivel, and not unfrequently before ripening perfectly, as in Muscats. Damp available surfaces occasionally, in the early stages of ripening in the morning and afternoon, diminishing it as the Grapes put on colour. Inside borders must have a thorough supply of liquid manure—a good soaking in a tepid state, to reach all parts down to the drainage. Outside borders must also be well watered if the weather be dry, mulching in each case at once with some rather dry litter—short, but without manure. This will in most cases be sufficient for perfecting the Grapes. Directly colour is noticed in the berries afford plenty of air, a little fire heat being essential to the high quality of the Grapes, insuring a circulation of warm rather dry air; but allow the temperature to fall to 65° at night, otherwise securing by artificial means a temperature of 70° to 75°, and 80° to 85° through the day for Black Hamburgs and similar varieties. Muscats should have when ripening a night temperature of 70° to 75°, falling to 65° on cold nights, 80° to 85° by day, up to 90° or 95° from sun heat. As Muscats require a longer time to ripen than other thin-skinned varieties there must not be any deficiency of moisture at the roots, as from the somewhat drier atmosphere required to impart the rich amber colour, the unique crackling flesh, and rich pleasing flavour peculiarly their own, the foliage from evaporation may suffer through insufficient supplies of matter for manufacturing into the essential cambium for sustaining the next year's growth and crop in their early stages.

Grapes Stoning.—Dull cold weather succeeded by bright sun is the worst possible for scorching and scalding. The best means of avoiding the former is early attention to the ventilation, and for scalding nothing that we have tried succeed so well as a gentle warmth in the pipes with a little air constantly, and free ventilation early and through the day. It is not desirable to close early at this stage, as the Grapes require time to perfect the stoning, and particular attention must be given to the ventilation, not closing early to cause a moist saturated atmosphere, but reduce it by degrees, so that the temperature and hygrometrical conditions may not be greatly fluctuating, which extended over a

period of two or three weeks, will insure immunity from scorching and scalding if not from the equally disastrous shanking. If the weather be very bright a slight shade over the roof lights is very beneficial, a double thickness of herring nets affording all the shade required.

Grapes Swelling.—Afford every encouragement; nothing assists so much as a genial condition of the atmosphere, which should be secured by a gentle warmth in the pipes, and sprinkling available surfaces in the morning and afternoon, particularly the latter, the border being mulched with a little short rather fresh lumpy stable manure, additions being made from time to time, so as to insure a supply of ammonia to the atmosphere and nitrogenous matter for washing into the soil each time water is required. The mulching being kept moist will aid in keeping the atmosphere moist, and a never failing attraction of the roots, but avoid a close, saturated, vitiated atmosphere, above all times in close, moist, dull weather. A little ventilation almost constantly will make all safe, but it is desirable to close the house in the afternoon, well damping at the same time, allowing the temperature to rise to 90° or 95°, and after the sun passes the west or at six o'clock, provide a little at the top of the house. It will allow of the air changing, prevent excessive deposition of moisture through the night, whereby the foliage will not be so liable to be scalded or scorched should the sun act powerfully on it whilst wet through ventilation not being given early enough to expel it; indeed, the great cause of scorching is inattention to early ventilation. A night temperature of 65° is ample, advancing early in the day to 70° to 75°, having recourse to artificial means if necessary. Increase the ventilation between 70° and 75°, allowing it to advance to 80° or 85°, between which keep through the day, and close as before stated to rise to 90° to 95°. Permit a steady growth in the laterals, it keeps the roots active, but avoid overcrowding, not allowing the laterals on any account to interfere with the principal leaves, so as to deprive them of light and air—the elaborating and storing of food in the buds at their base, those being the pruning buds. The outside borders should not be neglected where the rainfall is insufficient, and a mulching of fresh lumpy stable manure will lessen evaporation without depriving the soil of the beneficial action of air, warmth, and the moisture of dew and rain.

CUCUMBERS.—Attention must be given to plants in full bearing by way of thinning out the exhausted growths and foliage, laying in young bearing wood, stopping one joint beyond the fruit, and earthing the roots periodically. Copious supplies of water or liquid manure will be required about twice a week or as may be necessary, but avoid applying it too strong. Syringe at closing time, and maintain a good moisture all day long by sprinkling available surfaces as necessary, and always with tepid water, attending to it more frequently in hot weather than when dull. Do not overcrop young plants, and do not allow the fruit to hang too long, as upon attention to this depends in a measure a good and continuous supply. A few seeds may now be sown for a late summer and early autumn supply of fruit. They will germinate and the seedlings be fit to plant in about a month.

PLANT HOUSES.

Cyclamen.—Plants that are ripening their seed must not be allowed to become dry. Gather the seed daily as it ripens, and place the seed pods in a shallow box on a shelf where they can be exposed to the sun. Seedlings raised early in the year and then placed into pans and boxes will be ready for transferring into 2½-inch pots. After potting, place these close to the glass where they can enjoy a moist base and not be too shaded. Nothing is gained by trying to hurry the plants, better results will follow a dwarf sturdy growth. If kept too close the foliage is drawn up weakly, and the plants seldom do well afterwards. Plants raised last August and September that are dwarf, sturdy, and well established in 2½-inch pots should be placed without delay into 4 and 5-inch size. These will seem large for the plants at first, but by careful attention and good treatment they will soon increase in size and make bold large foliage. Be careful not to allow the plants to become dry after potting, and syringe them two or three times daily. If the structure in which they are grown runs north and south no shading will be needed. Give liberal ventilation when the sun is hot, and if the plants display signs of distress syringe them.

Bouvardias.—Old plants that were cut back and started in heat should be in their largest pots and then gradually hardened and placed outside. In any locality where they do well planted out place them on a sunny open border, after they have been thoroughly hardened, 1 foot or 15 inches apart, according to the size of the plants. Place those raised from roots early in the year into 5, 6, and 7-inch pots according to their size. If these plants have been well cared for they will have pushed up freely from the base. Stop any shoots that are taking the lead. Plants raised from cuttings needed for decorative purposes must be stopped when the shoots have made two joints to induce bushy little plants, these should be in 5-inch pots. Any shoots that spring from the base should be stopped just below those of a weaker nature.

Solanums.—Cut-back plants have commenced flowering freely. These should occupy a frame where abundance of light and air can be admitted. This will insure the fruits setting if the plants are given plenty of water at their roots, but the foliage must not be syringed. Plants raised from cuttings early will be bushy little plants in 3-inch pots. Place these in 5-inch and gradually harden them to cool airy treatment. Do not pinch them after they are potted, but allow them to flower and set their berries. Solanums do well in loam, sand, and one-seventh of manure. Pot the plants firmly.

Cinerarias.—The earliest plants may be placed into 5 and 6-inch pots. Arrange them in a cold frame, and do not overshadow them.

Smaller plants may be placed into 60's (3-inch), while later ones may be pricked into pans and boxes 2 inches apart. A little more seed may be sown in a cool house or frame.

Calceolarias.—Seed can be sown without delay. Fill a pan with light soil, fine and even on the surface, and then sow seed. Do not cover it, but water gently with a fine-rose can. Cover the pan with a square of glass, and shade until the seed germinates. When the plants are large enough prick them off into pans or boxes, and grow the plants perfectly cool in a frame with a northern aspect.

Begonias.—Those intended for autumn and winter flowering should be repotted as they need more root room, and grown in cold frames. Abundance of air must be admitted during the day, closing the frame early, so that the temperature will rise considerably by sun heat. Do not overshadow these plants, they will bear more sunshine than is generally given them. Begonias are frequently overshadowed. They need very little shade, and then only of the lightest nature if plenty of air is admitted when the sun is bright.

THE BEE-KEEPER.

APIARIAN NOTES.

THE WEATHER.

THE flowers are advancing, but the weather does not improve. On the morning of the 26th June our thermometer registered 35° Fahr., and in lower lying places the grass was stiff and white. Only once has the thermometer been above 70°, and while I am writing at midday, June 27th, it is standing at 55°, but is rising. We are having more sunshine, but heavier downpours of rain. By the time this appears in print we shall have entered a new and the last month for Clover honey, and not a super on yet. When the barometer is high it is cold and rainy without sunshine; when low, cloudy with intervals of sunshine, but of short duration. For three days the bees, anxious to gather from the profusion of flowers, have gathered a little honey, but not more than will keep them alive. It is to be hoped there will be some favoured spots where the bees will have revelled in sunshine and plenty, but from everywhere I hear the accounts are dismal. Our own stocks and others are farther back than they were more than two months ago.

SWARMING.

This may be expected out of season as it was in the autumn of 1889, so provision must be made to prevent loss of swarms. There are various ways of treating hives which have swarmed at the moors, but as strength accompanies large honey gatherings, perhaps the best thing to do is to remove the old queen. After a few days examine the combs and destroy all royal cells, unless one appears to contain a queen, because many cells, although sealed, are empty. A proper cell is easily known by the extra attention which the bees pay to it. These young queens must not, however, be relied upon, as they may not become fertile. Every effort should be made now to secure the proper number of queens, so that they may be fertilised before July is out. My young queens are flying for the first time to-day. The variable seasons we have experienced enable us to understand things better than those who have been bee-keepers but a short time. Beginners should take note of all that passes, and particularly the phases of swarming; it will dispel the idea that extra room, super or nadir, will prevent swarming. Crowding is a cause, but is but one of many causes. With the rise in temperature while I am writing, the air is in a roar with drones and bees, quite delightful to see and hear, every hive being in better condition than another, and a great deal more so than might have been expected after so long a time of cold, sunless, and ungenial weather.

A very few days of similar weather will in all likelihood give us more swarms than we wish, but all will be kept off, and as far as practicable two joined together, and after young queens we shall turn our attention to creating strong hives for the Heather. In ordinary cases we would have supered some days since, but the weather will not justify the proceeding.

PUNIC BEES.

All our hives being nearly equal in strength, two weeks' fine weather would enable us to test the Punic race. They have, so far as the season has gone, given us satisfaction. All we need now to prove them as to their abilities for honey gathering is settled weather of several weeks' duration. Everything in the shape of agriculture, horticulture, and the apiary requires it. We earnestly hope July will bring a favourable change, and brighten the spirits and fill the larns and the pockets of the husbandmen.

DRONES.

The bee-keeper should pay special attention and feed the hive containing the drones, which may be considered of a superior strain, so that they may be kept vigorous for the service of young queens.

SURPLUS QUEENS.

"You were good enough to answer my questions last December about bee farming, and all turned out well at last, for on the 3rd of May I had a very good swarm. About four days after I found a queen bee on the landing board numbed, but not lifeless, and I took her in the house. Another bee-keeper said she must belong to the old stock, and not to the young swarm; but presently there was such an uproar with the young swarm that my friend persuaded me to put the queen with them, which I did, and they seemed quite contented. The next night but one I found her or another queen bee in the same way, apparently dead; but after being in the warmth for a time she recovered, so I put her back as before, there being just the same uproar. It is said that when bees swarm once they will swarm again about nine days after the first, but I have only yesterday had the second swarm (June 21st), though the bees commenced to lay out on May 20th. Would you also tell me when is the proper time for me to put the old stock into a new hive, as I want to do so, and how can I do it? Would it be best done a few days after the swarm, or how?—A YOUNG BEGINNER."

It appears your stock swarmed with at least two queens, possibly the old and a young one, but more probably two young ones. When either is the case the swarm is unsettled, and not unfrequently leaves the hive. Yours appear to have remained with the usual commotion on such occasions. It also appears that the queen remaining with the old stock became fertile in a few days after the issue of the first swarm, and having large quantities of unhatched brood, became quickly crowded, hence the swarm on the 21st June. Look out for after swarms issuing in about ten days or more from it. Had you sent us the queen, we would have been enabled to tell you whether she was fertile or not. Altogether your bees have just done what has been predicted in these pages for some weeks past, and more eccentricities may be expected.

I had a hive ready to swarm on the 15th May; it lingered on till about the 3rd June, when several young queens and the old ones were thrown out. It is now three weeks since that, and it only threw the first swarm on the 21st June, and the hive has been divided into four, and still many queens are piping, and upwards of fifty have already been counted; in all probability as many more remain in the hive. The weather is so unfavourable that it precludes either successful manipulation or swarming, or I should have made at least a dozen of it. No young queens hereabouts have mated yet. When there is no brood in the hive is the proper time to put the bees into a new hive. You will see from the foregoing the question cannot be answered with certainty. You might do worse than keep it as it is for another year.—A LANARKSHIRE BEE-KEEPER.

THE BRITISH BEE-KEEPERS' EXHIBITION.

THIS Association held its annual Exhibition at Plymouth last week under the auspices of and in connection with the Royal Agricultural Society. Apiculture is recognised by "The Royal" as one of the subjects which should be prominently brought before all those connected with or interested in agriculture, and they have for several years given a handsome subscription to the British Bee-keepers' Association to assist them in providing funds for the prizes and other expenses incurred in connection with the Show.

Part of each day's programme consists of lectures on bee management, also demonstrations of bee driving, thus affording an opportunity for the visitors to see how the honey may be taken in its purity without destroying the bees, and the ease with which the various manipulations can be carried out. Mr. Green of Raynham, in Kent, one of the experts of the B.B.K.A., was in charge of the bee tent, and well did he fulfil the duties entrusted to him. His lectures were plain and practical, given in a quiet, unassuming, and instructive manner, and although a manufacturer of bee-keepers' appliances did not mention the fact or puff off his own goods as has been sometimes the case at exhibitions of this kind. Those interested were invited by Mr. Green to ask him any questions, and the replies given will, we think, practically assist those seeking information and instruction.

The greatest possible interest was shown by the thousands of visitors who thronged this Exhibition examining the hives, &c., and endeavouring to obtain information about bee-keeping when they saw with their own eyes how easily bees may be profitably managed.

There were fifteen classes in which prizes were offered, seven being for hives and appliances and eight for honey. The following is a list of the awards. The Judges were Mr. Broughton Carr, Rev. F. S. Slater, and Mr. Walter Martin.

HIVES, HONEY, &C.

For the best collection of hives and appliances.—First, W. P. Meadows; second, Charles T. Overton. For the best observatory hive.—

First, Chas. T. Overton. For the best and most complete frame hive.—First, Chas. Redshaw, South Wigston, Leicester; second, Chas. T. Overton; third, W. P. Meadows. For the most complete and inexpensive frame hive for cottagers' use.—First, no award; second, Chas. T. Overton; third, Hutchings Bros. For the best honey extractor.—First and second, W. P. Meadows; highly commended, Turner and Sons. For the best pair of section racks.—First, W. P. Meadows; second, Chas. Redshaw; third, Chas. T. Overton. For the best feeder.—First and second, W. P. Meadows.

HONEY.

For the best twelve sections of comb honey.—First, W. Woodley; second, Wakefield Christie-Miller; third, Rev. F. T. Scott. For the best six sections of comb honey.—First, W. Woodley; second, J. Garratt; third, W. G. Preece, jun. For the best section of comb honey.—First, J. Garratt; second, Miss M. L. Gayton; third, Capt. W. St. G. Ord. For the best exhibit of run or extracted honey.—First, J. Garratt; second, James Thorn; third, Mrs. E. J. Cox; fourth, M. Whittle. For the best exhibit of granulated honey.—First, W. Sturdy; second and third, Rev. J. Kempe. For the best and most attractive display of honey, in any form.—Second, James Thorne.

MISCELLANEOUS.

For useful inventions introduced since 1883.—Commended, Thos. Lowth. For the most interesting and instructive exhibit of any kind connected with bee culture.—First, Rev. J. Kempe; third, Henry J. Orchard.

The competition in the hive classes was not so keen as it is sometimes, and we understand that some of the manufacturers arranged not to exhibit this year; probably the district in which the Show was held may have influenced them, being difficult and expensive to get to. Be this as it may, we think it rather a pity that they do not appear to have entered in any class, and short-sighted policy. The sending of a single hive would not have cost much, and would not need the expense of attendance of anyone at the Show. They will find others will do so and come to the front. There was nothing new among the appliances to particularise. The hives, the design, size, &c., were left entirely to the exhibitor, and most of them consisted of stock hives with standard frames, with hives of shallow frames $5\frac{1}{2}$ deep for storifying, as is considered the simplest and best way of obtaining the largest quantity of honey by the use of the extractor. The arrangements for obtaining honey in section was much the same as usual. The season for honey is rather backward, and although some of the exhibits were of good quality, there was not the quantity staged we should have expected to have seen.



TO CORRESPONDENTS

All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Insects on Elder (R. F. J.).—It is a species of aphid, which usually attacks the Elder, and we have seen the young shoots in many districts black with them.

Flower Supports (N. G.).—Both cane and bamboo stakes are neat and durable. They are sold in sizes adapted to various plants by most nurserymen, seedsmen, and dealers in horticultural requisites who advertise in our columns.

Plants Seeding (B.).—Seed-bearing is unquestionably weakening to any plant, and though this applies with less force to some than to others, yet in every case it produces an injurious effect varying only in degree. Probably in the instance you mention it would be less hurtful to the plant to ripen the seeds than to have the stems removed.

Mignonette Dying (Radhurst).—The plants are liable to collapse suddenly in some soils, and in one of the finest gardens in Britain this fragrant plant cannot be grown outdoors. Lime in the soil is essential to its well-being, but a Vine border, in which your Mignonette is "going off," ought not to be deficient in lime. It may be, however. Mignonette also likes firm soil, and that of some Vine borders is too light both for it and the Vines. Cannot you try it in another position in the garden?

Peas Withering (*L. Dawes*).—We cannot find any grubs or insects on the roots sent. The small tubercles on the roots of leguminous plants appear to be natural productions, and are present on the healthiest and most productive of Peas. Some Peas are attacked by a fungus on the lower part of the stems, but neither the cause of the visitation nor a remedy appears to be known. Potash in the soil is a necessity for Peas, and in its absence there cannot be healthy growth; moreover, some varieties of Peas are more prone to fail in certain soils than are others, and quite recently we noticed two rows of Peas in a similar condition to yours, while two other rows growing next to them of a different variety were as healthy and productive as could be desired.

"Lobster Plant" Leaves Spotted (*F. S.*).—The leaves of the *Clianthus* sent are somewhat discoloured by the excretion of insects, probably of aphides. In addition to the dark deposit a number of white exudations are seen on the upper surface of the leaves. These may be a result of the punctures made by the insects, or may be due to secretion by the plant; indeed the larger patches have a decided opening in the centre, as if an ooze had taken place through it. There is no fungus, and the tissue of the leaves is perfectly healthy. If we mistake not (and we have only the foliage to guide us) the plant is *Clianthus puniceus*, a beautiful greenhouse semi-climber, hardy against walls with southern or western exposures in the southern parts of England, and we believe in Ireland also. In the southern counties it assumes large proportions and is grand when in bloom. Although there are no insects we think the appearance is in favour of the plant having been infested with aphides. Syringe with an approved insecticide.

Mildew on Vines (*A. J. L.*).—You are indeed "in a fix," as you say, and are to be pitied. We cannot understand anyone going to the expense of erecting a vinery 80 feet long without providing the means of heating it. The structure is essentially incomplete, and no one has a right to expect a good and certain supply of Grapes from it. Under certain weather influences mildew is almost certain to appear, and the danger is great of its eventually destroying the crop of fruit and seriously injuring the Vines. All you can do is to maintain, as well as you can, a buoyant atmosphere, yet avoiding sharp currents. This you have probably done, and if so the mildew on the Vines is not your fault but your misfortune. We have not tried the composition you name on Vines, and if we did should proceed experimentally. We should dust every affected part with sulphur, distributing it through a muslin bag, and let it remain for three or four days. Some gardeners have had to roll the bunches in platefuls of sulphur when they could not otherwise make it adhere to the berries. They will be injured more or less in whatever way the parasite may be destroyed, but if it is allowed to increase it may ruin the crop.

Grapes Decaying (*A. Z.*).—We suspect the misfortune is due to the decay of some of the roots in the "very heavy clay soil." It is a question if the outside border needed water when you gave it, and we think covering such soil with green cow manure in the spring the reverse of good practice. The border ought to be covered in winter with shutters or thatched to throw off the wet, and should be exposed to the sun in spring and early summer, pointing it over very lightly yet frequently for raising the temperature of the soil; and not until the surface became very dry, with signs of cracking apparent, should we apply manure, and then it would be much less close in its nature than that you have used. Such soil as you describe needs a very large admixture of lime rubbish, coarse sand, and wood ashes, or bruised charcoal to render it suitable for the production of good Grapes; and covering the ground half an inch thick with charcoal dust in early spring would do good in two respects—absorbing heat and conveying potash to the soil. The roots of the Vines should be carefully lifted and placed in more suitable soil nearer the surface. If they are left alone, and you continue the present practice, we fear the decay of the fruit will spread year by year, though much will depend on the weather. The site must be efficiently drained.

Shading Roses under Glass (*S. S.*).—Probably the only reason you have had no response to your inquiry is that our Rose correspondents consider yours to be an exceptional case, due to defects of ventilation or too clear large panes of glass, as the best growers do not find it necessary to shade their houses. A house that rises to 110° is defectively ventilated, and with full ventilation, assuming it to be efficient, the temperature ought not to exceed more than 5° to 10° that of the external air. The best glass is not the best for greenhouses, and is not usually employed, thirds being as a rule the clearest that is employed for horticultural purposes. We had some Peach houses glazed with 42-oz. glass of the best quality, and we found that after May the sun's rays acted with such force as not to allow the fruit time to ripen properly, the apex being ripe two full days in advance of the base. We passed a double thickness of herring-nets over the roof lights, which insured the fruit ripening more slowly and evenly, and made a great difference in the quality also, it being more juicy and piquant in flavour. With Roses under similar glass—i.e., polished plate in large panes of several feet superficial—similar precautions were necessary to insure the blooms acquiring size, substance of petal, and durability, as without it they were thin as well as deficient in fragrance. Tiffany was used in this case, but it was too dense, and a double thickness of herring netting subdued the strong heat and light sufficiently. Under 21-oz. and 15-oz. British sheet, thirds quality, we have rarely found it necessary to shade Roses, except when bright weather followed a dull period, when a temporary shade of the material named over the roof lights prevented the blooms opening too rapidly. Your case may be similar to those named, or you may have erred in methods of ventilation.

Centipedes (*A. L.*).—The specimens you send differ somewhat from the centipedes with which we are most familiar, and more closely resemble *Julus complanatus* than any other species that we can call to mind. We doubt if anything will be more effective in banishing them than a little petroleum well mixed in water or soapsuds. Half a wine-glassful of the oil in a gallon of water is safe for most plants, and more than twice as much has been used with many without injurious results. A few experiments will enable you to find a strength that is safe for the plants, and that will banish the abounding pests. Constant agitation is requisite or the oil will float on the water. By petroleum we mean the oil which is popularly but erroneously called paraffin, and burned in lamps.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*G. B.*).—A Pavia, but the material was not sufficient to permit its determination. (*K. E.*).—*Calycanthus floridus*. (*G. T. B.*).—1, *Solanum dulcamara*. 2, *Scabiosa caucasica*. 3, *Polemonium Richardsoni*. 6, *Habenaria bifolia*. The others were insufficient. (*E. M.*).—The specimen was quite decayed when it reached us, but it seems to be a variety of *Asphodelus ramosus*. (*J. B.*).—The white flower is a variety of *Centaurea cyanus*, the other is a Spanish Iris, *I. Xiphium*, and there are white varieties of that and *I. xiphioides*. (*J. G.*).—*Scilla peruviana* and *Cephalaria tatarica*. (*W. C.*).—We should have been glad to have a specimen of the stem, and we can only judge the faded flower received to be that of *Cereus grandiflorus*.

COVENT GARDEN MARKET.—JULY 2ND.

STRAWBERRIES in heavy supply with bad trade, owing to the wet weather. All classes of goods lower.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.	
Apples, $\frac{1}{2}$ sieve	2	0	to	6	0	Lemons, case	19	0	to 15	0
„ Nova Scotia and						Melons, each	2	0	3	6
Canada, per barrel	18	0	25	0		Oranges, per 100	4	0	9	0
„ Tasmanian, p. case	15	0	0	0		Peaches, dozen	1	0	12	0
Cherries, per $\frac{1}{2}$ sieve ..	9	0	12	0		St. Michael Pines, each..	2	0	6	0
Grapes, per lb.	1	3	3	0		Strawberries, per lb. ..	0	0	0	6

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.	
Artichokes, dozen	0	0	to	0	0	Mushrooms, punnet ..	1	6	to 2	0
Asparagus, bundle ..	2	0	4	0		Mustard & Cress, punnet	0	2	0	0
Beans, Kidney, per lb. ..	0	9	1	0		Onions, bushel.. ..	3	0	4	0
Beet, Red, dozen	1	0	0	0		Parsley, dozen bunches	2	0	3	0
Brussels Sprouts, $\frac{1}{2}$ sieve	0	0	0	0		Parsnips, dozen	1	0	0	0
Cabbage, dozen	1	6	0	0		Potatoes, per cwt. ..	3	0	4	0
Carrots, bunch	0	4	0	0		„ New, per lb. ..	0	2	0	0
Cauliflowers, dozen.. ..	2	0	4	0		Rhubarb, bundle	0	2	0	0
Celery, bundle	1	0	1	3		Salsafy, bundle	1	0	1	6
Coleworts, doz. bunches	2	0	4	0		Scorzonera, bundle ..	1	6	0	0
Cucumbers, doz.	2	0	3	6		Seakale, per bkt. ..	0	0	0	0
Endive, dozen	1	0	0	0		Shallots, per lb. ..	0	3	0	0
Herbs, bunch	0	2	0	0		Spinach, bushel	1	0	2	0
Leeks, bunch	0	2	0	0		Tomatoes, per lb. ..	0	6	0	8
Lettuce, dozen	0	9	1	3		Turnips, bunch	0	4	0	0

CUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.	
Arum Lilies, 12 blooms ..	2	0	to	4	0	Mignonette, 12 bunches..	2	0	to 4	0
Asters, per bunch, French	1	6	2	0		" Fr., large bnch	1	6	2	0
Bouvardias, bunch ..	0	6	1	0		Narcissus, 12 bunches ..	0	0	0	0
Carnations, 12 bunches ..	4	0	6	0		Paeony, dozen bunches ..	6	0	12	0
" 12 blooms ..	1	0	2	0		Pansies, dozen bunches ..	1	0	2	0
Calceolaria, doz. bunches	4	0	6	0		Pelargoniums, 12 trnses	0	9	1	0
Cornflower, doz. bunches	2	0	4	0		" scarlet, 12 bnchs	4	0	6	0
Eschscholtzia, 12 bunches	2	0	4	0		Pinks (various), doz. bchs.	3	0	6	0
Encharis, dozen	4	0	6	0		Primula (double) 12 sprays	0	6	1	0
Forget-me-not, doz. bnch.	1	6	4	0		Ranunculus, doz. bunches	2	0	4	0
Gardenias, 12 blooms ..	1	6	3	0		Roses (indoor), dozen ..	0	6	1	6
Iris, various, dozen bnchs.	6	0	18	0		" Moss (Eng.), 12 bch.	6	0	13	0
Lapageria, 12 blooms ..	2	0	4	0		" Red (Eng.), 12 bch.	4	0	9	0
Gladiolus, 12 bunches ..	4	0	9	0		" Red, 12 blooms ..	2	0	4	0
Gypsophila, per bunch, Fr.	1	6	2	0		" Tea, white, dozen..	1	0	3	0
Lilium, various, 12 blms.	0	9	2	0		" Yellow	2	0	4	0
" longiflorum, 12 blms.	2	0	4	0		Spiraea, dozen bunches ..	6	0	9	0
Marguerites, 12 bunches	2	0	6	0		Tuberose, 12 blooms ..	0	6	1	0
Maidenhair Fern, dozen						Wallflowers, doz. bunches	2	0	4	0
bunches	4	0	9	0						

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.	
Aralia Sieboldi, dozen ..	6	0	to	12	0	Geraniums Scarlet, p. doz.	3	0	to 6	0
Arum Lilies, per dozen ..	8	0	12	0	Heliotrope, per doz. ..	5	0	8	0	
Arbor Vitæ (golden) doz.	6	0	8	0	Hydrangea, doz. pots ..	9	0	18	0	
Azalea, various, per dozen	0	0	0	0	Lily of the Valley, 12 pots	0	0	0	0	
Calceolaria, per doz. ..	6	0	9	0	Lobelia, per doz.	4	0	6	0	
Climbing Plants, various,					Marguerite Daisy, dozen	6	0	12	0	
dozen pots	4	0	9	0	Mignonette, per dozen ..	4	0	6	0	
Cyclamen, per dozen ..	0	0	0	0	Musk, per dozen	2	0	4	0	
Deutzia, 12 pots	0	0	0	0	Myrtles, dozen	6	0	12	0	
Dracæna terminalis, doz.	24	0	42	0	Nasturtiums, dozen pots	3	0	4	0	
" viridis, dozen	12	0	24	0	Palms, in var., each .. .	2	6	11	0	
Epiphyllum, per dozen ..	0	0	0	0	Pelargoniums, per doz. .	9	0	18	0	
Erica, Cavendishi, per pt.	2	0	3	0	Rhodanthe, per dozen ..	4	0	8	0	
" various, dozen	12	0	18	0	Roses (Fairy), per dozen	8	0	10	0	
Euonymus, var., dozen ..	6	0	18	0	" 12 pots	12	0	24	0	
Evergreens, in var., dozen	6	0	24	0	Saxifraga pyramidalis,					
Ferns, in variety, dozen ..	4	0	18	0	per dozen	18	0	24	0	
Ficus elastica, each. . .	1	6	7	0	Spiræa, 12 pots	6	0	9	0	
Foliage plants, var., each	2	0	1	0	Stocks, per doz.	4	0	6	0	
Fuchsia, per doz.	4	0	9	0	Tropæolums, various, per					
Geraniums, Ivy, per doz.	4	0	6	0	dozen	3	0	6	0	

Bedding Plants in variety, in boxes and pots.



LESSONS AMONG THE CROPS.

Now, while the main crops of the year are in the full flush of summer growth a walk over the farm enables one to get many a useful lesson, many a hint, for improvement in the general cultivation of the farm as well as of particular fields, if only we are able to grasp fully the meaning of the pages of Nature's book lying open before us, and to see why the condition of this crop is so flourishing, or of that crop so weak. Not in a single season is this to be done with a full degree of certainty, for it is impossible to know all about any farm till one has had it in hand for two or three years. There are, however, certain general indications which may be taken as a sufficiently safe guide upon which to base conclusions, so that by the exercise of caution one need not go far wrong.

For example, when a field of corn has a yellow tinge and slender growth a want of manure may be the cause, but this poverty of growth and sickly appearance is sometimes present in highly manured land, and then it is owing to imperfect drainage. We have seen many unsatisfactory corn fields on heavy land recently—some with vigorous deep green patches among a generally weak growth, a sure indication of poverty of soil; and others uniformly weak, either from poverty or wetness. A weak sickly appearance of corn plant is often said to arise from cold and wet, and the remark is much more significant than many of those who make it suppose, for the cold is not really an abnormally low atmospheric temperature, but is that coldness of a waterlogged soil which renders anything like luxuriant growth impossible. The stoppage of a single drain serves admirably to illustrate this; above the stoppage growth is feeble and stunted, below it growth is vigorous and entirely satisfactory. When such faults in drains occur the advantage of marking the exact position of every drain in the farm map is seen—the fault is entered in the notebook, its position shown on the map, so that subsequently, after the crop is cleared, the fault may be set right.

No indication of poverty of soil should be overlooked. If it is worth while to cultivate land at all it is certainly worth while doing it well. The position of a field often determines the manner and matter of manure application. It is notorious that much goes to the land nearest the cattle yards, and the balance of fertility can be well maintained all over the farm by means of green crops for ploughing in, sheep folding, and chemical manures. It has long been our custom to winter a lot of cattle in enclosures made specially for that purpose on different parts of a farm. By this plan much expense for labour and cartage is avoided, and the work of storing provision of food for winter near such enclosures is already in progress. Large silage stacks are being made now, a field or two of roots is sown near each yard, and a certain number of corn stacks will also be made there, Beans, Peas, Barley and Oats all being cultivated for this especial purpose. The shelter sheds erected in such enclosures are built entirely of materials obtained upon the estate, and so far as is possible upon the farm itself. They are snug, substantial and tolerably neat, but not a penny is wasted upon mere appearance; so long as thorough shelter can be had that is sufficient. We make special mention of these yards now as a word to the wise, who are looking forward and striving to economise as well as improve. In making arrangements for them do not overlook the due provision of water, and either place the yard near a stream or a pond. Many a pond have we made by turning a main drainage outfall into a hollow space deepened slightly by excavation. Recourse can be had to a water cart, but that is precisely one of the things we wish to avoid.

In our round of inspection a sharp outlook must be kept for interlopers among special sorts of corn. We procure enough seed of any new sort of promise for trial at the home farm, and for distri-

bution to off-hand farms if it proves satisfactory, and as the ears develope, every plant that is not true to name is carefully sought for and rooted up, not necessarily to be wasted, for we have no more nutritious fodder than corn in ear, and all stock eat it greedily. We had much trouble last season in the clearance of such "rogues" from our new Mountain White, or Salvator Wheat. This is a white bearded Wheat of the Rivett type, which, so far as our experience of it goes, contains a rather large per-centage of Rivett Wheat, or a sort bearing a remarkably close resemblance to it.

Old Sainfoin fields that are losing plant fast and becoming very foul are among the things we shall see requiring prompt attention, and there should be no hesitation about breaking up such exhausted layers for another crop. Among weeds there are none so difficult to eradicate as charlock, and its first appearance upon a farm should be the signal to look for it again and again, and to destroy every plant of it before it forms seed. There should be no hesitation about this, or it will soon spread over every field, to rob the soil of its precious fertility, and when once established it can hardly be got rid of again.

WORK ON THE HOME FARM.

Ensilage is becoming more simple every season, and so it ought, because silage is just a heap of herbage laden with enough of some heavy substance to press it together sufficiently to exclude air. A patent apparatus may be used, but it is a mere question of pressure, and whether we impart that pressure by chains and screws, or by bags of sand, or by the soil nearest to our hands, the result appears to be very much the same, and that is just so much wholesome nutritious food. The herbage has only to be taken to the heap or stack fresh from the scythe or mowing machine, the pressure applied at once and continuously till the silage is used, to ensure success. Very simple are these two or three points, but they must have attention, and it will not answer to attempt to make hay, and to get the herbage into a mouldy sodden condition, and then to try and turn it into silage.

Haymaking has been much delayed by the unsettled weather, and much hay has been spoiled in badly made cocks and in ricks left open without rick cloth or straw to protect them. There ought always to be a rick cloth with poles, blocks, pulley, and ropes, but for small ricks rain can be kept out by keeping the middle of the rick full, and the use of a little straw for a covering at night or during showery weather. The first crop of Clover is a heavy one, but much of the Clover hay will be of doubtful quality, and would have been much more valuable if it had been made into silage; but we are the slaves of custom, and much more inferior hay will be made before silage supercedes it, as it certainly will one day.

A dripping June has certainly ensured to us an abundant hay crop; Tares, Sainfoin, mixed seeds, Clover, yellow Suckling are also all a full crop. Lucerne is as usual excellent, and of other green crops, white Mustard, Cabbage, and Kale are all a full and vigorous plant, so well established and full of growth that hot weather can do little if any harm to them now. Of root crops, Mangold, Swedes, and early white Turnips are well established and quite safe, while the recent sowings are well up, and growing so freely that very little damage from insects is probable. The rain has helped on fallow ploughings on heavy land, especially as it has fallen with sufficient frequency to soften the harsh soil, and we may hope for plenty of hot sunshine to destroy weeds.

OUR LETTER BOX.

Bearded Wheat (J. P. R.).—Bearded or horned Wheat is not uncommon. It is very productive, and several of the heads contain more than four rows of grains. It is not very extensively grown, as the quality is comparatively inferior.

METEOROLOGICAL OBSERVATIONS.

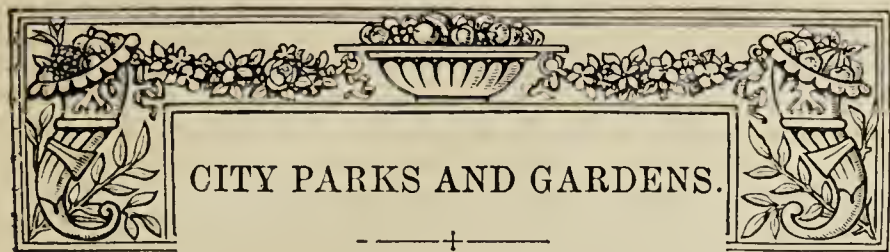
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain
1890. June.		Baromet- er at 32° and Sea Level.	Hygromet- er.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min.	In sun.	On grass		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Sunday	23	30.143	58.1	55.2	S.W.	59.0	66.9	50.6	119.9	48.0	0.017	
Monday	23	30.169	65.1	61.0	N.E.	58.9	70.9	57.1	88.9	54.6	0.012	
Tuesday	24	30.184	62.0	60.4	S.W.	59.3	76.9	57.8	124.8	54.1	0.019	
Wednesday ..	25	30.117	61.4	57.4	S.W.	60.1	78.2	55.2	122.6	50.4	0.112	
Thursday	26	29.948	59.7	57.7	S.E.	61.9	67.9	58.2	104.2	57.2	0.102	
Friday	27	29.836	60.4	53.7	N.W.	60.0	69.3	49.3	120.8	46.3	—	
Saturday	28	29.815	60.5	54.5	S.W.	59.9	66.1	49.1	110.0	44.9	0.533	
		30.630	61.0	57.1		59.9	70.9	53.9	111.6	50.8	0.795	

REMARKS.

22nd.—Generally overcast, but occasional sunshine.
23rd.—'Full and threatening throughout; mist or fog at midday.
24th.—Showery till 10.30, then fine; bright and warm in the afternoon.
25th.—Bright and warm; a little cloudy in the afternoon.
26th.—Wet from 3 A.M. till 11.30 A.M.; showery to 3.30 P.M., then fine and bright.
27th.—Generally bright.
28th.—Bright early; spots of rain at 10.30; then cloudy and very wet from 2 P.M.
A showery week: the temperature continues near the average in spite of the noticeable absence of hot days, because the nights keep warm.—G. J. SYMONS.



CITY PARKS AND GARDENS.

— + —

CONTINENTAL improvers of cities have long recognised the desirability of providing abundant open spaces for the recreation of the people, and in some cases the work has been carried out on an extensive scale. Paris may be taken as a notable example of what can be effected by following out a well considered liberal plan of city embellishment, and the advantages are manifest to every visitor. Not only have parks, gardens, and open spaces been provided in numbers, but the roads and streets themselves have been rendered quite as horticulturally attractive and equally as beneficial from a sanitary point of view. Trees and shrubs have been planted in thousands, until the city itself is like a vast garden. Many less important towns in France and Belgium have taken a lesson from Baron Haussmann's great work, and wisely included in their necessary expenditure, the provision of parks and gardens for the people.

Here in England we do not obtain State aid, and but seldom the use of civic purses for such work; it is mostly left to the munificence of private individuals, or to the few societies that have within comparatively recent years sprung into existence for that special object. In some of the larger, densely populated, provincial towns like Manchester and Newcastle-on-Tyne, the matter has received much public attention, with the result that money has been raised in various ways, tracts of land have been given or purchased and laid out in parks. The two cities named are now well provided in this way, and others could be mentioned where considerable progress is being made in the same direction.

London can also boast some extensive and well kept parks, which excite the admiration of strangers, and their importance cannot be over-estimated. Still, for so great a city, there is a deficiency of smaller open spaces just where they are most needed—namely, in the poorer and more densely populated districts, which are often widely removed from the great parks. Societies have been formed for the special purpose of acquiring land in these districts, and within the past ten or twelve years a wonderful improvement has been effected, though very much yet remains to be done. One organisation that has taken a prominent part in the work is the Kyrle Society, which commenced its career in 1877, and can already point to a creditable record of accomplished improvements. This Society owes its origin we are told, to a letter written in 1876 by Miss Miranda Hill, calling attention to the “dull commonplace lives of the poor, and suggesting that means taken to enliven and beautify these lives would be labour well spent.” The Society thus started has taken a broad view of its object “to bring beauty home to the people,” but of its four branches that devoted to “open spaces” is by far the most important. The support of the Duke of Edinburgh was secured as President, with the Princess Louise as Vice-President; a large and influential General Committee was formed, and sub-Committees for the different branches. During the past thirteen years many small open spaces have been secured to the public through the exertions of this Society, and their most recent acquisition is the Vauxhall Park, which was formally opened on Monday last by the Prince of Wales. Its history is briefly as follows:—

This little park of about eight acres occupies the site of the houses formerly known as the Lawn, and Carron House. The Lawn was the name given to seven houses—each possessed a long old-

fashioned garden—standing together in an enclosure, behind a refreshing strip of green sward, dotted with a few old trees. The river Effra at one time flowed in an open channel between the houses and the South Lambeth Road; and the grass and trees, from which the Lawn derives its name, probably covered the course of the stream. Carron House, named after Sir Noel Caron, Dutch Ambassador to the Court of St. James's in the early part of the nineteenth century, stood in its own grounds of considerable extent between the Lawn and the road known as Fentiman Road.

The Lawn is mainly interesting as the residence of the late Henry Fawcett from the year 1874 to the time of his death at Cambridge in November, 1884. In the southernmost house of the group, that next to Carron House, Mr. Fawcett lived during his term of office as Postmaster-General from 1880 to 1884; and here, in the autumn of 1882, he passed through the serious illness which barely spared his life, and to the effects of which his subsequent sudden death must no doubt be traced. In the long garden, which now forms part of the park, pacing up and down the gravel paths, or sitting under the trees, he was wont to discuss with his friends the various projects for ameliorating the lot of the people which he was constantly initiating, amongst which none occupied a place nearer his heart than the preservation for public use of ample commons, parks, and gardens.

When therefore in 1887 it became known that the Lawn and Carron House had come into the hands of a gentleman who viewed them as material for a thriving building speculation, it was felt to be only due to Mr. Fawcett's memory to make a determined effort to avert such a misfortune, and to put the ground to the use which he would most have approved, that of a park for the people. The Vauxhall Park Committee was formed, with Mr. Mark Beaufoy, now the member for the Kennington Division of Lambeth, as its Chairman and Treasurer, and Mr. Walter Edwards as Secretary. A working men's Committee was also constituted. An Act of Parliament was obtained, authorising the purchase by the Vestry, and power was conferred upon the Metropolitan Board of Works and other public bodies to contribute towards the purchase money. The price asked was £43,500, and the cost of obtaining the Act, and other expenses, raised the total sum required to over £45,000, without reckoning the expense of laying out the Park. The aggregate of the contributions obtainable from public bodies left over £9000 to be raised by private subscription. At a critical moment, when the time for purchase had nearly expired, the Kyrle Society threw its whole influence into the movement. Public meetings were held, at one of which the Princess Louise, Vice-President of the Kyrle Society, was present; and the Prince of Wales was pleased to meet a few representatives of the working men at Lambeth Palace, and to express his interest in the scheme. A large amount was collected through the instrumentality of the Kyrle Society; in the course of a few weeks the necessary sum was raised, and in the spring of last year the land was conveyed to the Vestry of Lambeth. It still remained to clear and lay out the land as a garden, a work entailing an expense of upwards of £2000. This expenditure was undertaken by the Kyrle Society, plans were prepared and approved by the Vestry, and the Society made itself responsible for the necessary funds. The garden has been laid out from the designs of Miss Wilkinson, by Mr. Holmes, of Hackney; and the railings and other architectural works have been executed under the superintendence of Mr. Harrison Townsend, F.R.I.B.A.

The programme on Monday, July 7th, at the opening of Vauxhall Park, when the Prince and Princess of Wales were attended by the Duke of Edinburgh, Princess Louise, and the Archbishop of Canterbury, included the presentation to the Prince of several officials who had been concerned in the scheme, amongst them being Miss F. Wilkinson and Mr. William Holmes, and the latter assisted the Prince in planting a small Plane tree as a memento of the opening ceremony.

The plan is an admirable one for a small park, as can be seen in the engraving (fig. 6, page 21), reduced from a copy of the original plan kindly supplied by Miss Wilkinson, and the work has been carried out in a satisfactory manner. The greater portion has been sown with grass, and a close green sward has been already obtained. The paths are excellent, an important point in a park of this kind; some old trees remain from the former gardens, but more shrubs are required, especially in the boundary borders.

BLOOM ON GRAPES.

A THICK coat of bloom gives the finish to Grapes. Without it they present a polished unnatural appearance; with it intact the colour, being good, black Grapes especially, may be said to be perfection. Once it is lost it cannot be made good in any way, Nature in this case defying all attempts at imitation. This being so, it behoves all would-be successful growers, exhibitors or otherwise, to be very careful how they act, every care being taken not to rub the berries with the scissors, hand, or head at any time after they have commenced their first swelling. Syringing the foliage after the flowering period is usually fatal to the bloom, as, if it does not actually wash much of it off, it leaves a stain behind that nothing can erase or hide. All this is well-worn, oft-repeated information, but there are other agencies at work in the matter, either for good or ill, not quite so well understood. For instance, there are a few varieties rarely seen carrying a good coat of bloom, this being very marked in the case of Gros Guillaume among black, and Mrs. Pearson among white Grapes. Why the bloom should be so thin in the former case and almost absent from the berries of Mrs. Pearson is one of those things not easily accounted for. I shall not attempt it, but if any reader of the *Journal of Horticulture* can give a satisfactory explanation of this enigma I hope he will do so.

As far as the generality of varieties are concerned, it is my belief that what favours thorough ripening and colouring, the two conditions not being altogether inseparable, also promotes, in most cases, the formation of a thick coat of bloom. As I attempted to prove on page 1, a good circulation of air night and day is necessary to insure perfect colouring and ripening of Grapes, and I am also of opinion that the same conditions are equally necessary to promote the formation of bloom. When a stagnant, moist atmosphere is maintained the bloom will be very thin and unsatisfactory, abundance of fresh warm air being best calculated to create and preserve the bloom as we like to see it. At Longleat for many years past very much more air, both at top and bottom ventilators, is admitted, without lowering the temperatures more greatly than is often the case, and the thickness of bloom on the Grapes has always been most marked. Mr. W. Taylor, when at Longleat, and since, always prided himself upon the beautiful bloom his Grapes invariably carry, but whether he will endorse my theory I am not able to state.

It is possible to so treat Grapes as to have them with a good coat of bloom only to lose it in a few minutes. Nor is this all. The loss of bloom by exudation is also soon followed by the decay of the berries, and it would thus really appear that the bloom is not merely for appearance sake, but is really needed as an aid to keeping. If this is not so, what is the cause of Grapes that have lost their bloom, owing to faulty ventilation, keeping so badly? Destroy the bloom and the berries may absorb moisture through their skins; preserve it, and we have one good preventive of sudden decay. This commits me to the endosmose theory, against which I have previously argued, but we live and learn, and I fail to see why we should not recant our errors, especially if we can do any good by so doing. Too much moisture in the atmosphere undoubtedly causes cracking of the berries in some instances, and where it does not act so suddenly it yet gradually destroys the bloom, and with it, therefore, the Grape's first line of defence. From the present time onwards the greatest care ought to be taken to prevent a sudden rise in the temperature of a house of Grapes. Few gardeners probably realise how cold the berries always are, whether there is fire heat in the house or not, but if they will gather one and place it against their cheek they will then better understand how it is warm moisture so quickly condenses on them. Neglect to give sufficient air to prevent this condensation of moisture, and in a short space of time it will commence to trickle down the berries, carrying the bloom with it. Even if air is given freely just in time to prevent running, but not condensation, the bloom is yet loosened from its hold, and the moisture finds its way inwards, rapid and wholesale decay of the skins being the consequence.

Being too economical with fire heat militates greatly against Grapes ripening and keeping properly, and it follows the lower the temperatures during the night the colder the berries become. On

no account should the whole of the top ventilators be closed during the night for a house of ripe or fast ripening Grapes. If the air is admitted by means of sliding sashes (the worst form of ventilation), these necessarily have to be drawn up rather closely, in wet weather especially, but this difficulty may be obviated somewhat by having end ventilators as well as those along the front, these being set well open in warm wet weather especially. Our earliest vinery is situated in a low damp position, and the greatest difficulty is experienced in keeping the Grapes. Not being able to open the top lights sufficiently in all weathers we have had net-covered shutters for fixing in the place of the doors, these shutting out birds and admitting air freely. Even this will not prevent sudden condensation of moisture on the bunches between the top running lights, and a very close look out has to be kept. Not only is top air given freely early on clear mornings, or not later than six o'clock at this time of year, but if the lights are partially closed during a heavy shower of rain, they have to be opened within five minutes of a partial outburst of sunshine. Contrivances in the shape of closely woven cotton or other material for excluding wasps are equally effective in preventing a good circulation of air, and if fixed this must be done in such a manner as to admit of the lights, both top and bottom, being opened if need be to their fullest extent. Any of those close nettings for ventilators and muslin bags for the bunches are simply "traps for the unwary," and, what is very much to the purpose, can be dispensed with. We each season send to a nurseryman at Yeovil for a small bottle of wasp destroyer, and this proves an infallible remedy. Let those who doubt my word try it for themselves, and then for the relief thank—W. IGGULDEN.

BORDER CARNATIONS.

For several years border Carnations caused me considerable difficulty. One reason, no doubt, was the unsuitable nature of the soil, and I was assured by those who had known the garden for many years that it was impossible to succeed with Carnations. A few years ago I was fortunate in discovering a detail which has almost revolutionised Carnation growing here. It is a detail which is of quite as much importance in gardens where there is no difficulty in their culture as in gardens the least suitable. Instead of waiting and layering the grass for young stock until the summer is well advanced, we now layer at the earliest moment. The first week in July most of our outdoor stock is finished, and the results are these: The young growths are quite soft, and root more quickly than later in the year, the heat of the summer having no doubt an important bearing on this rapidity of root formation. The plants when well rooted are lifted and placed into the beds, and have a long autumn before them—not only to become established, but to form large plants, which produce plenty of flower stems the next year. These large plants are slightly liable to the drying processes, which were the worst matters we had to contend with; and lastly, there is no difficulty in securing plenty of "grass" from such plants much earlier in the season than it is possible to do from those planted in spring which had been layered late in the preceding year.

There is a good illustration of the difference between early planted layers of the same year and plants kept in nursery lines until spring in a series of beds we have the present season. The spring-planted Carnations produce one flower stalk, and every individual is of small growth and much later than the plants which, layered at the same time, were at once placed into their flowering quarters. Several stalks are the rule with these, and plenty of shoots ready for layering at once. Want of time at a busy season no doubt deters many from attempting to carry into practice the experience just detailed, but I do not find the work is difficult to accomplish. We have about 2000 plants, and the system of layering is to send one man with a penknife to slit down the layer and form a tongue to provide roots; no leaves are taken off, and as a rule in the light soil we have to deal with it is hardly necessary to add any open material for inducing quick root action, so that securing the layers in the ground is quickly overtaken by two men provided with a supply of cut bracken stems with which the growths are pegged down. While the soil is in a moderately damp state is the most suitable time. In cases where it is deemed necessary to apply a rooting medium nothing is better than a mixture of leaf soil and sand in equal proportions. Moisture is essential to the formation of roots, and indeed few plants suffer more severely than Carnations in a season of drought, so that a moist condition of the soil is one of not the least important items in their culture.

Blooms of the new white Carnation Mrs. Muir have been forwarded and noted. I think it is destined to hold a foremost place among not only white varieties, but among hardy flowers. My plants

have been grown in pots, but they exhibit a free-flowering habit with any quantity of "grass." It is said to be a seedling from an old border Picotee most commonly known as Redbraes, though that is a name not nearly so old as the variety. Redbraes, it may be said, is a gardener's flower. Several years ago I sent it to a well known florist, who was so disgusted with its rough marking that it was destroyed before the first blooms had time to expand. Notwithstanding, it is to-day more popular than any other sort. Along with others it seeded very freely three years ago, and I raised some good varieties for the border from it, but none so good as that of the Skye Carpenter. It is quite time, I think, that flowers of this type should be alone recognised as worthy of being introduced. The flowers are not so large as numbers, but on account of its perfect non-splitting calyx it is of the greatest value for everyday work. It is rather like Germania in general appearance, and is a good companion flower, R. H. Elliott among fancies having the same good qualities.—B.

THE BRITISH FRUIT GROWERS' ASSOCIATION. STRAWBERRY CONFERENCE.

THE conclusion of two of the papers read at the above Conference commenced last week is given in the present issue, and the others will follow at the first opportunity.

THE ORIGIN OF THE CULTIVATED STRAWBERRY.

BY MR. SHIRLEY HIBBERD.

(Concluded from page 6.)

AN important contribution to the history of this fruit will be found in the ninth volume of "Le Jardin Frutier du Museum," of Mr. J. Decaisne, published 1862 to 1875. The material for the article "Le Fraisier" in this work was in great part supplied by Madame Elisa de Vilmorin, but the classic work on the subject, by M. Duchesne, published 1766, has been relied on chiefly for matters lying out of the region of Madame de Vilmorin's inquiries and observations. According to this authority there are seven species of Strawberry.

The wood Strawberry, *Fragaria vesca*, is described as freely scattered over Europe, Asia, and America. It is unknown in Africa, but otherwise is a free citizen of the world. The Alpine Strawberry, *F. Alpina*, is considered by Decaisne a variety of the wood Strawberry. The variety known as *Monophylla*, the One-leaved Strawberry, of which there is an example on the table, was raised by M. Duchesne in 1761 from the wood Strawberry. It is of no special interest, as the fruit does not differ from that of the wild plant. In the year 1887 Messrs. Lovell of Driffild sent me plants of the popular Sir Joseph Paxton that had become one-leaved, but in the year following these plants produced leaves three-divided, according to the proper pattern.

The Hautbois, *F. elatior*, belongs to Central Europe. It is well known to be partially dioecious, a fact that needs to be recognised by the cultivator, and one full of interest as a feature in the biology of the genus *Fragaria*. Miller's *F. muricata*, with green fruit the size of a Plum, is a variety of the Hautbois.

The green Pine, *F. collina*, described as a native of Germany, differs from others in some trivial peculiarities of the calyx. It is a variety of the Hautbois, and has no proper claim to specific distinction.

Hagenbach's, *F. Hagenbachiana*, is probably the produce of a cross between *F. vesca* and *F. collina*; in other words, a hybrid of the wood and Hautbois Strawberries.

The Scarlet or Virginian, *F. virginiana*, is described by Decaisne as introduced to Europe in the first half of the eighteenth century, but we have the testimony of Parkinson that it was in the country in the first half of the seventeenth century, so that Decaisne may be considered in error to the extent of a century in this matter. *F. canadensis* is the Canadian form of this same Scarlet Strawberry.

The Chili, *F. chiloensis*, is reported by Decaisne as introduced to France in 1712, and he describes it as producing grand foliage and fruits that are sometimes as large as pullets' eggs. He adds that it often requires to be fertilised by other varieties of its own species. The first mention of the South American Strawberry is by M. Frezier, who, in 1716, found it at the foot of the Cordillera Mountains near Quito, and carried it home to Marseilles. The Spaniards reported that they obtained it from Mexico, and through them it may have reached Paris at a date anterior to its discovery by M. Frezier, which would perhaps justify Decaisne's date, 1712. Mr. E. P. Roe, in his admirable book on "Success with Small Fruits," says, "From Mr. W. Collett Sanders, an English antiquary, I learn that seven plants were shipped from Chili, and were kept alive during the voyage by water which M. Frezier saved from his allowance, much limited owing to a shortness of supply. He gave two of his plants to M. de Jussieu, who cultivated them in the Royal Gardens." In 1727 the Chili Strawberry was introduced to England by Miller, as cited above. He describes it as a bad bearer. Duchesne says later importations from America to England met with better success, for early in the century new varieties of *F. chiloensis*, as well as of *F. virginiana*, became quite common, both in this country and on the continent.

Decaisne adds that the varieties of the Chili Strawberry make amends for the smallness of their number by their beauty and ex-

cellence. The Pine, or Great-flowered Strawberry (*F. grandiflora*), he declares to be of unknown origin, but incontestably a garden hybrid.

Gray's *F. Grayana* and the Californian *F. lucida* are forms of *F. virginiana*. The last-named has some distinctive features of leafage, and is very decidedly dioecious, and commonly sterile.

Decaisne's seven species shrink to four when investigated, but we must not forget the diversity of opinion that prevails as to the limitations of species, and the French botanists usually lean on slender characters to make many species.

In the year, 1818, when, on August 4th, Mr. Thomas Andrew Knight, President of the Horticultural Society of London, presented his memorable paper on "The Variations of the Scarlet Strawberry," the three reputed species of American Strawberries were fully established as garden plants, but there was nothing like a collection of varieties in existence. It is particularly interesting to observe that he sets out by declaring his belief that all the American Strawberries are "varieties only of one species; for all may be made to breed together indiscriminately, and I have found that similar varieties may be obtained from the seeds of any of them; and upon the same evidence I consider the wild Strawberry of Canada, the Bath Scarlet, and the Black, and, in short, all our large Strawberries, with the exception of the Hautbois, to be varieties of the same plant." In evidence of his command of facts as the basis of criticism, he reports that he had raised 400 new varieties, "some very bad, but the greater part tolerably good, and a few, I think, excellent." He describes only eighteen varieties, in respect of which there is not much to be said. But mention should be made of No. 2, produced from the seed of White Chili and pollen of the Black Strawberry, one of the berries of which weighed 274 grains. The colour of the fruit was scarlet, the form conic, and not at all flattened or deformed."

That our garden Strawberries, after much crossing and selecting, still represent the two American species need not to be enforced, for they carry the evidence in their characters. But there are points of importance in those characters that have obtained less than their due share of attention. One of these is a tendency to a dioecious habit of flowering. A perfect flower of a Strawberry contains both stamens and stigmas after the proper fashion of a rosaceous plant. But it happens that under certain circumstances flowers containing only one set of organs are produced; those that have stamens in sufficiency to be hermaphrodite being termed staminate, and those from which the stamens are absent pistillate. This part of the subject has obtained more attention in America than with us, but English gardeners have always had to recognise the fact in the cultivation of the Hautbois. This exhibits the dioecious tendency in so striking a manner that unless a plantation is closely watched, it in time becomes barren, because the male plants outrun the females, and take their place by sheer force of superior vigour. But it is a mistake to suppose that the staminate plants are absolutely necessary when the desire of the grower is to obtain Strawberries as fruits without any regard to the vitality of the seeds that those fruits may carry. The prevailing indifference to this part of the subject is scarcely pardonable when the business in hand is the raising of new varieties; but for all the ordinary purposes of the cultivator it is certainly not of great consequence, because the varieties grown in this country and on the continent of Europe are mostly pistillate; but as they are all capable of varying in their sexual capacities, the cultivator cannot with impunity ignore the facts of Nature. Our grand British Queen is often said to be fastidious in its requirements as to soil and climate, but in all probability it occasionally proves less fruitful than its wont through becoming staminate, for plants can change their sex to suit their circumstances, as I have proved in the case of the Holly, and some other garden plants. The frequency of the staminate form, as the case is represented by American culturists, is doubtless a consequence of certain peculiarities of the American climate, for their staminate kinds appear to become pistillate when removed, and the garden varieties that still rank nearest to *F. virginiana* are with us as decidedly pistillate as any. Our wood Strawberry is pretty constant in its floral characters, having five petals and four stamens to each. But the American Strawberry in its original form often has five or six stamens to each petal; and occasionally there are seven petals and forty to forty-two stamens. On the other hand, the pistils of these staminate flowers are often incomplete or but partially developed, and there is a deficiency of fruit accordingly. The Chili species is often deficient of pollen, and, therefore, is advantageously grown with other varieties. Probably the best representative of the Virginian Strawberry now in our garden is the Crescent Seedling, an early, smallish, scarlet, sprightly flavoured fruit, that appears likely to become popular for the first supply. I have examined many flowers of this variety, and have seen no indications of the predominance of either sex; in other words, they appear to be normally hermaphrodite.

In the year 1861 I made an examination of the flowers in a collection of Strawberries that were fruited under glass, and 100 blooms each on ten different varieties, making 1000 in all, were marked. The varieties were Scarlet Nonpareil, Black Prince, Carolina Superba, Oscar, Sir Harry, Empress Eugenie, Keens' Seedling, Belle de Paris, Eleanor, and Sir Charles Napier. From the 1000 marked flowers 887 berries were gathered. Those that failed appeared to begin life with equal conditions with the rest, but were impaired by insects, damp or shrivelling; in fact, they failed through what may be termed accidental causes, and not through any want of pollen to effect fertilisation, or any absence of stigmas to receive it. This observation was reported by me in the *Gardeners' Magazine* for August 16th, 1861. But although I do not urge the cultivator to watch narrowly for staminates and pistillates, I

am certain that there are times when the subject should have more attention than it obtains; and I have noticed, and possibly you have also, a hot dry season is one of those times that certain shy bearers appear to be more fruitful when grown in close association with other sorts, as though pollen were sometimes deficient. But while we discuss the difference between European and American Strawberries in respect of this question of stamens and pistils, it will be proper to keep in mind that the Strawberries of Europe are mostly descended from the Chilian and Virginian stocks; while those of the United States are the progeny of the Virginian stock almost exclusively. And there is no shadow of whim or taste in the matter, for the South American race suit the European climates, and the North American race suit the North American climates; for in those States in which Strawberries are in the greatest demand, the winters are too cold and the summers too hot for the progeny of *Fragaria Chiliensis*. Thus the question of stamens and pistillates is simplified, for the southern plants are more distinctly hermaphrodite than the northern, and this fact accounts for our indifference to the subject of sex in this fruit.

In view of these considerations it is remarkable that Decaisne in a list of thirty-one varieties, the parentage of which he attributes to *F. virginiana*, should include such evident hybrids as Admiral Dundas, British Queen, Eleanor, Eliza, Elton Pine, Goliath, Grosse Sucrée, Jucunda, Keens' Seedling, Lucas, Marguerite, Oscar, Sir C. Napier, Sir Harry, and Wonderful. As "issues" of *F. Chiloensis* he names only Barnes' Large White and Chili Orange, both late varieties, fertile, and of good quality. He might now, perhaps, be enabled to recognise in the vigorous-habited Waterloo the influence of the South American Strawberry; but it must be confessed that in garden varieties the species have been so much mixed, that to determine in any case which of the parents predominates is well nigh impossible. That our American friends are chiefly indebted to their own wild Strawberry for the varieties they prize is admitted by all the authorities from Downing to Roe, and the fact differentiates *F. virginiana* from *F. vesca*, the first being capable of endless variation, and the second being apparently as immovable as the Britisher himself, and as incapable of quitting the groove scooped in the world for it by Nature.

But our wood Strawberry takes at least three forms, which may be designated the *vesca*, *alpina*, and *elatior* forms. In like manner the American Scarlet takes a *virginiana*, an *illinoensis*, and a *canadensis* form; while the South American appears in a *chiloensis*, a *grandiflora*, and a *Carolina* form. These several sub-species, as they may be termed, may be regarded as connecting links that establish family relationships between the several species, and in the first instance reduce the reputed six species to an actual three, and the actual three to a possible one. Should we be enabled to trace the origin of the Strawberry so far back as to unite the species, we might go a step further, and entertain the notion that, to use the terms of the evolutionists, the plant originally produced dry carpels in the way of a *Potentilla*, but adopted the ingenious device of adorning the carpels with a sweet and fragrant pulp to bribe the birds to disseminate the seeds. But you did not invite me to indulge in speculations, and I will therefore be content in having placed before you a few matters of fact that may prove serviceable in aid of practical work; for a knowledge of how a thing was made may serve as a guide to the process of improving it.

GARDEN STRAWBERRIES.

BY MR. J. WRIGHT.

(Concluded from page 7.)

MIDSEASON STRAWBERRIES.

SOME years ago an election of Strawberries was conducted by the late Rev. C. P. Peach. Several growers in various parts of the country voted for what they considered the best varieties. The returns showed that Sir Joseph Paxton headed the poll, but with President almost an equal first. If a poll were taken now I suspect they would maintain their positions. They are two of the most useful in cultivation. Then we have the thoroughly serviceable, hardy, and free Vicomtesse Hericart de Thury. Sir Charles Napier is a standard variety at Chiswick—perhaps the most serviceable there of the midseason sorts, but it fails in some cold soils and districts. Countess, one of Dr. Roden's varieties, is a thoroughly good Strawberry, growing well, and bearing its rich fruit in abundance. Lucas is a large handsome fruit, and the plant is vigorous and prolific. The good old Keens' Seedling is still worthy of a place in limited collections. British Queen must be grown where it will thrive, and where it will not Dr. Hogg should be tried; where both grow and bear both should be cultivated. James Veitch usually bears bountiful crops of large fruit, and is a favourite in many gardens. La Grosse Sucrée is decidedly useful, and Hammonia is perhaps not so much grown as its merits deserve as a large, solid, good flavoured variety, and not the less useful in being rather late. A dozen midseason Strawberries are named from well proved varieties, and I leave others to supplement the list. If I were to choose six from the twelve for linking the earlier with the later they would be the first six in the following list:—

- | | |
|-----------------------|----------------------------------|
| 1. Sir Joseph Paxton. | 7. Vicomtesse Hericart de Thury. |
| 2. President. | 8. Sir Charles Napier. |
| 3. Countess. | 9. La Grosse Sucrée. |
| 4. Dr. Hogg. | 10. Keens' Seedling. |
| 5. James Veitch. | 11. Lucas. |
| 6. Hammonia. | 12. British Queen. |

They are not placed in the order of merit, but the two last in each six are placed there because they connect the midseason with the late varieties. Dr. Hogg is placed in the first six because it succeeds in many gardens where British Queen fails. Vicomtesse Hericart de Thury is rather small, but if a cottager were to confine himself to just one variety, this would, perhaps, be the most serviceable. Twenty-two varieties are named, five early, twelve midseason, and five late. Reducing them to selections of twelve and ten for succession they stand thus:—

FIRST TWELVE.

1. Noble.
2. Crescent Seedling.
3. King of the Earlies.
4. Sir Joseph Paxton.
5. President.
6. Countess.
7. Dr. Hogg.
8. James Veitch.
9. Hammonia.
10. Elton Pine.
11. Eleanor.
12. Waterloo.

SECOND TEN.

1. Pauline.
2. Marguerite.
3. Vicomtesse Hericart de Thury.
4. Sir C. Napier.
5. La Grosse Sucrée.
6. Keens' Seedling.
7. Lucas.
8. British Queen.
9. Frogmore Late Pine.
10. Loxford Hall Seedling.

They are not exactly arranged in the order of ripening, but endeavour has been made to place in the first twelve those which combine the essential qualities of earliness and lateness with good size, quality, and productiveness in the majority of gardens, though there are a few sorts in the second ten that may excel in some. Still further reducing, we have two good half-dozen for succession in the following:—

FIRST SIX.

1. Noble.
2. Sir Joseph Paxton.
3. President.
4. Dr. Hogg.
5. Waterloo.
6. Elton Pine.

SECOND SIX.

1. King of the Earlies.
2. Vicomtesse Hericart de Thury.
3. Keens' Seedling.
4. Sir C. Napier.
5. British Queen.
6. Eleanor.

If I were asked to nominate the three most useful varieties for small gardens they would be Noble, Sir Joseph Paxton, and Vicomtesse Hericart de Thury.

It is open to cultivators to make better selections than the above, and I shall be very glad if they will do so.

I should like to know something about Dr. Livingstone Strawberry. A grower of it in Scotland states he has had "basketfuls of equal sized fruits of it eight and ten to a pound." I presume he does not mean eighteen. He further says, "No Strawberry will grow under trees as well as this does," and from rich new soil he "pulled 4 lbs. of fruit from each yearling plant." He has also recorded that he has had fruits of Cockcombs 4 ozs. and 1 grain each. This is Strawberry growing extraordinary, and I, for one, have still something to learn.

Of Laxton's Latest of All, A. F. Barron, Auguste Nicaise, Duchess of Edinburgh, Crown Prince, Souvenir de Kieff, Oscar, and Princess Frederick William something may perhaps be said by gardeners who have grown them. Of the first named especially it would be interesting to know if it justifies its name. Mr. Gibson of Draycot finds Princess Frederick William one of his best earlies, ripening in May, and this and the Vicomtesse are perhaps the best for yielding second crops in the autumn from plants that have been forced in spring. I have more than once found Newton Seedling my sheet-anchor during a wet Strawberry season in the fruits having remained firm when most others were rotting on the ground.

I must say a word on behalf of the very distinct, richly flavoured, and much neglected Hautbois Strawberry. Years ago it was grown in most well furnished gardens, and enjoyed by their owners. It is now almost as scarce as the delightful Frontignan Grapes. There is a variety of the Hautbois at Chiswick, more prolific than any I have seen, and richer than any other Strawberry in the garden. Mr. Laxton should cross it with Noble, combine the virtues of both, and give the world a treat.

In some of the "best families" the Grove End Scarlet or Roseberry have to be specially grown for preserving. They are planted about 9 inches apart in beds, and grow into a mass. They are forms of the Virginian Strawberry. The last named was raised near Aberdeen—a chance seedling that came up under a Rose bush—hence the combination of Rose and berry—Roseberry. For that little "tip" I am indebted to my friend Mr. Barron.

Passing to sites for plantations of Strawberries, we arrive at an important practical matter in connection with a prolonged supply of fruit. This cannot be in the best manner secured without choosing the warmest positions, such as south borders (for some at least of the first early sorts), and north borders, or the coolest available positions, for the latest varieties. I have found this method of appropriation of the greatest possible advantage, and have practically doubled the length of the Strawberry season over what it was and must be when only midseason varieties are grown in an open position, or in the same quarter of ground. Yet this is still the practice in many gardens. I have recently seen a good example of the method advocated. On a south border Noble was first gathered on the 3rd of this month, and the beds cleared and the runners layered on the 23rd. In the same garden later varieties, but not the latest, are now (June 27th) flowering on the cool north border. If all had been grown in the middle of the garden, the ripening of the early variety would have been retarded and the later advanced, thus shortening the season.

by at least a fortnight. For a steady family supply of fruit, surely adapting varieties to sites on the principle suggested is the better way.

Soil and its preparation can only be briefly referred to. Strong soil is considered by many persons to be an absolute necessity for the production of good crops of Strawberries. That is perhaps the popular view, but it is a popular fallacy. It does not matter how light the land may be, provided uniform moisture is maintained in it, and it also contains the manurial constituents that Strawberries need, for the best of crops and the finest of fruits will then be produced. Potash is the chief mineral food of the Strawberry, constituting nearly half the bulk. So it is of Peas, and if the soil is made capable of producing first-rate crops of Peas it will grow first-rate crops of Strawberries, only these require more moisture. If strong soils shrink and crack, out goes the earth moisture, and down go the leaves of the plants; then

manuring his Strawberry ground. What is the secret of the remarkable success? Moisture—regular, constant, uniform moisture. Water is not far below the surface, 2 or 3 feet perhaps, and rises to the roots in the form of vapour under the influence of the sun. If you move the dusty surface you find the moisture. It reminds of the sandy fields in Holland in which bulbs are grown, where the Dutchmen level down the elevations to bring the surface nearer to the water below. The sandy Strawberry ground has no doubt been a sea beach at some remote age, and there may have been considerable marine deposits. Be that as it may, there are grown every year some of the finest and most valuable crops of Strawberries in some of the lightest sandy soil in Britain, if soil it can be called. I have not said much about soil preparation. Heavy land must be made friable, and light land nearly let alone for Strawberries. Digging this, especially in dry weather in spring, is worse

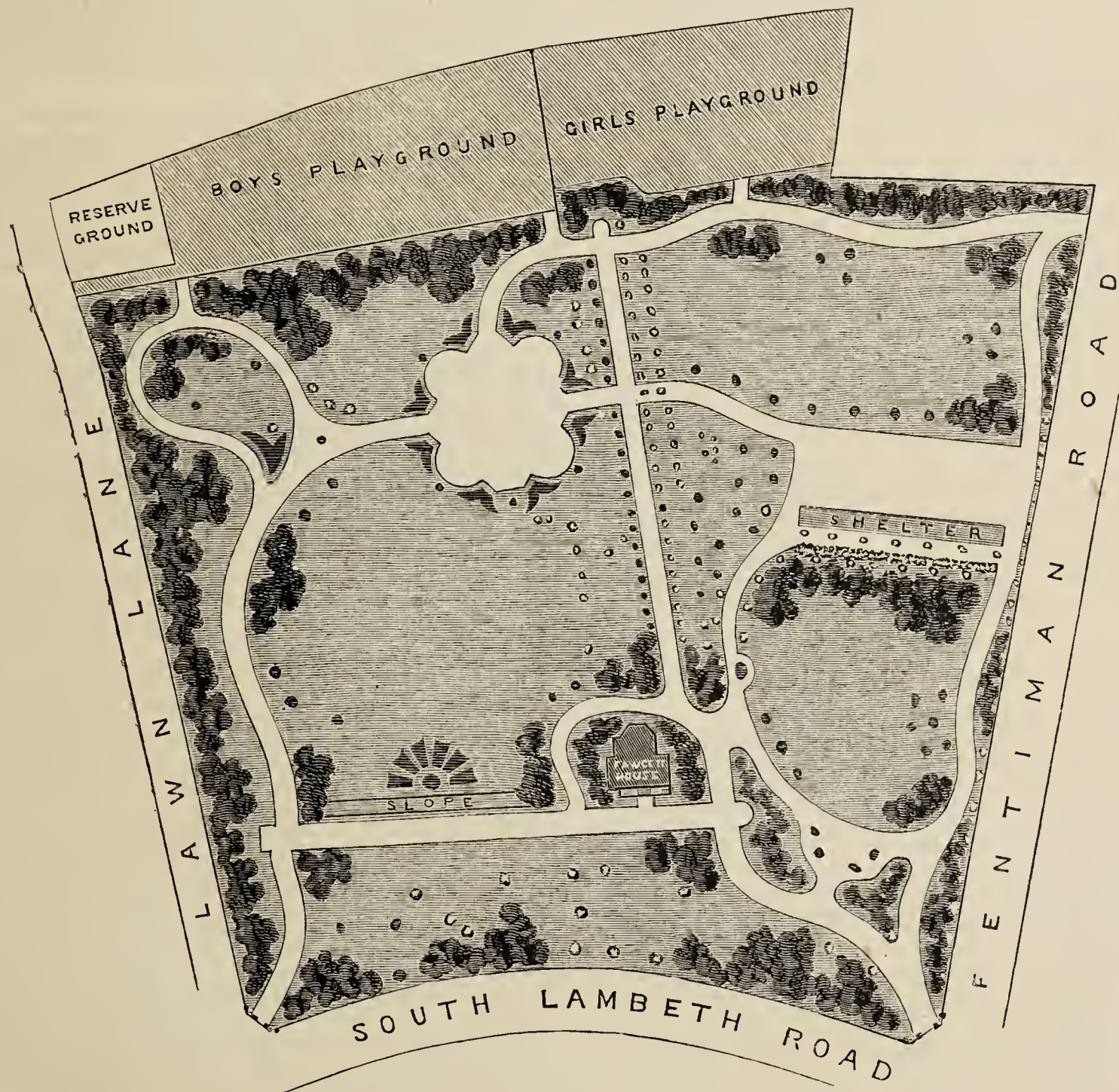


FIG. 6.—PLAN OF VAUXHALL PARK. (See Page 17.)

all is over. Cracking rarely occurs in light soil, and if it is deep it can be kept moist by heavy mulchings applied either in the autumn or very early spring. This work is often done too late. I do not say that Strawberries cannot be grown in strong soil, for they can. I have had to grow them in soil strong enough for brick-making, but did not like it half so well as a much lighter free-working medium. Make light soil firm, keep it moist and charged with fertility, and though Strawberry plants will not grow luxuriantly they will bear fine fruit abundantly. If anyone doubts this let him go and see Mr. Sharpe's culture near Virginia Water. His field is a bed of sand—nothing but sand, and if not covered would blow away under strong wind in dry weather. I have travelled far, and visited gardens in most counties, but nowhere have I seen the equal of Mr. Sharpe's crops of Marguerite, and the splendid fruits have taken first prizes at scores of shows. I am positive I have seen 2 to 3 lbs. piled up round a plant, the trusses reaching quite beyond the small hard-looking leaves. No manure is used. When it was applied it increased the growth of leaves at the expense of the fruit, and as fruit-growing paid Mr. Sharpe better than leaf-growing he ceased

than labour wasted, and all the manure that it needs after the plants are established should be applied on the surface.

I have yet to say a little, and it can only be a little, on methods of cultivation. I am a strong believer in what I call the annual system, though it is strictly biennial, of growing Strawberries, especially the earliest crops, on south borders. Subject to certain reservations for any special purpose, let the border be practically devoted to three crops—and no three are more important—early Potatoes, Strawberries, and Peas, but chiefly the two former. After the Potatoes are cleared off level the soil, but if of a light nature do not dig it. If dry scoop out some hollows and fill them with liquid manure, more than once if needed. Have ready sturdy young Strawberry plants with bushy fibrous roots, which plant carefully and well about 15 inches apart, water them and mulch. By the autumn they will produce hard nut-like crowns, and in the spring earlier and finer fruit will be produced than from old plants. Immediately the crop is gathered clear away most of the mulching, spread a couple of inches of free soil containing much vegetable refuse, leaf mould, and wood ashes between the rows; press

down the runners in it with flat stones, and by the end of July you will have the best of young Strawberries for planting, and when they are inserted dig the parents up at once and crop the ground, if you like, with winter Spinach. In this way a stock of vigorous early Strawberry plants is maintained, very different from those from enfeebled parents. I have planted in the open early in August for two years fruiting, placing them together in triangles $2\frac{1}{2}$ feet from row to row and a little closer in the lines, and the following season gathered 2 lbs. of fruit from each clump, but 1 lb. is nearer the average, and not a bad crop in the time. Hundreds of persons may do the same without difficulty when they once get in the way of it and have rather light and fertile soil.

For preventing the deterioration of some Strawberries in some gardens it is absolutely necessary to procure plants occasionally from vigorous stocks. In no other way could I grow the British Queen in one particular garden. Plants propagated from the home stock became weaker yearly, and so it is with others if long grown in certain soils and positions that are not naturally adapted for producing well constituted plants.

In reference to the durability or profitable period of fruitfulness of Strawberries, that is a question of soil mainly. Some soils will sustain the plants for several years, others will not. Generally speaking, perhaps, the second year's crop is the best in the majority of light soils; the third year's in soils of a more holding nature. By thinning the crowns and surface manuring, profitable crops have been afforded for seven years, and I have seen a productive Strawberry bed fifteen years old; but this is exceptional, and as a rule stout early young plants that mature quickly are the most satisfactory in gardens, and a suitable number for increasing the fullest supply of the finest fruit should be planted every year, a corresponding number that have yielded their maximum crop being chopped up immediately after fruiting.

Another practical point to bear in mind is this, a greater breadth both of the very early and very late varieties should be planted than is customary. Owners of gardens usually wish for more Strawberries than they get when the first fruits commence ripening, and gardeners cannot produce as many dishes of Strawberries late in the season as are wanted, unless they plant suitable sorts freely, for the crops of very late Strawberries are not nearly so heavy as those of midseason varieties. But I must stop.

I began with the remark of an old doctor, and will conclude with the observation of another, pertaining to the use of Strawberries, and the good effect they had on an eminent man, whose name is familiar to gardeners throughout the world. It was the custom of a physician to terminate his spring course of lectures by a Strawberry festival. "I must let the class see," he said, "that we are practical as well as theoretical. Linnaeus cured his gout and protracted his life by eating Strawberries."

HORTICULTURAL SHOWS.

TWICKENHAM SHOW.—JULY 2ND.

THE historic district of Twickenham has been renowned for its horticultural shows for a considerable time, the present Society having this year completed its majority, but, like other societies, it has in recent years had to contend with increasing competition and occasional periods of ill-luck due to unfavourable weather. Still, under good guidance it has weathered the storm, and again last week presented numerous visitors with a pleasing display of horticultural produce and artistic floral designs. The Society is fortunate in possessing an extremely courteous and able Secretary in Mr. J. J. G. Pugh, and it has the support of a practical and thoroughly interested Committee, amongst whom Messrs. W. Bates, R. W. Freshwater, W. J. Fitzwater, Fordham, and Poupert may be specially mentioned.

The Show was held in the grounds attached to Orleans House, the residence of W. Cunard, Esq., a delightful position, and fortunately, though the weather on the previous night had been extremely unpromising, it was fairly fine the whole of Wednesday, thus inducing a large number of visitors to assemble. The competition was not very keen in the plant classes, but several exceedingly tasteful groups were contributed. The best of these in class 1, arranged in a space not exceeding 100 square feet, was from Mr. H. E. Fordham, Richmond Road, and well balanced highly tasteful display, with a background of Palms, a base of Ferns, with Cattleyas, Gloxinias, Begonias, and taller Corcopsis, Lilioms, and Tuberoses, margined with Isolepis and Pansies. It was bright without being too gay, the flowers and foliage well proportioned. Mr. J. Parsons, gardener to T. Twining, Esq., Penrhyn House, Twickenham, was a good second, his group being a trifle heavier than the first, but in all other respects it was an example of admirable arrangement. In the class for a group on 50 square feet Mr. G. Watts, gardener to H. Little, Esq., Twickenham, secured the premier award for an exquisite group in the best style—light, varied, and bright, fresh green Ferns forming the groundwork, from which arose Cattleyas, Begonias, Irees, and other flowering plants, with an edging of Sibthorpias, Caladiums, and Grasses. Mr. Parsons also won the first prize for nine stove and greenhouse plants, and Mr. Little had similar honour for six well-grown Orchids, and the same exhibitor secured honours for Zonal Pelargoniums and Tuberous Begonias, excellent plants being staged in each case. For six table plants Mr. Gage, gardener to the Earl of Dysart, Ham House, won first with neat little specimens, but closely followed by Mr. Waite, gardener to W. P. Talbot, Esq. Gloxinias from Messrs. Hilditch and Tindale were extremely fine, both as regards the size and colour of the flowers.

Cut flowers and floral decorations occupied a large tent, and con-

stituted the special feature of the Show. Roses were fresh and good from several exhibitors; Mr. C. Warwick, gardener to J. P. Kitchen, Esq., taking first place for twenty-four blooms, and Mrs. Rust was second in the same class, Mr. J. Bateman, Upper Holloway, being third. With twelve Roses the prizes went to the same exhibitors in the order named, but in the district class for twelve Roses Mrs. Rust was first, Messrs. Kestin and Hoar being second and third respectively. In the floral decorations Miss E. L. Clarke, Twickenham, was very successful, her tasteful arrangements securing four first prizes, lightness and the avoidance of discordant colours distinguishing this lady's exhibits. Mrs. J. Vickery, Miss G. Gardner, Miss A. Müller, Mr. Fordham, and Mrs. Freshwater also contributed well to this department, the stands of flowers and the baskets of Roses constituting charming features.

Grapes, Melons, Peaches, Nectarines, and Strawberries were shown in capital condition, and the leading prizes were secured by Messrs. W. & E. Wells, Waite, W. Cunard, G. Sage, F. J. Wadham, Howell and Goody. Cucumbers, collections of vegetables, and Tomatoes were similarly good, while the cottagers' productions filled a tent, and were as usual of high merit.

LEE, BLACKHEATH, AND LEWISHAM.

ONE of the best Exhibitions of stove and greenhouse plants held around London this season was that of the Lee, Blackheath, and Lewisham Horticultural Society, which took place on July 2nd and 3rd in the grounds of Mrs. Penn, The Cedars, Lee. It would be difficult to find better grown specimens of either flowering or foliage plants than were shown there, the former being abundantly furnished with flowers and beautifully trained, and the latter possessing foliage the picture of health and cleanliness.

Particularly fine were the specimens of *Dipladenia amabilis*, *Anthurium Andreanum*, *Clerodendron Balfouri*, and *Ixora Williamsi*, shown in the class for six stove or greenhouse plants in flower by Mr. J. Hudd, gardener to F. W. Prior, Esq., these winning the first prize. In previous years Mr. S. Reece, gardener to R. Whyte, Esq., has had the leading position in this class, but this year he had had to take a second place, his plants, though admirably grown, being, with two exceptions, scarcely so well flowered. In Mr. Reece's collection were two plants well worthy of note on account of their great size and abundance of flowers—*Erica gemmifera elegans* and *Parmentieriana*, plants rarely seen in such good form nowadays. In the next large class for six plants of ornamental foliage Mr. Hudd again came in first with some grand plants of *Croton Queen Victoria*, *Cycas revoluta*, and *Cycas undulata*, the latter being a sturdy well furnished specimen. As in the previous class, Mr. S. Reece ran a close second. In his collection a noteworthy plant was *Phyllotænum Lindeni*. The third prizewinner was Mr. J. Lambert, gardener to H. W. Segelcke, Esq. Ferns were in capital condition, the specimens being large, choice, and well furnished with healthy green fronds. Mr. Hudd won the first prize for six exotics, one of his specimens, *Davallia Mooreana*, measured fully 5 feet in diameter, and proportionately large were *Gleichenia rupestris glaucescens*, *Microlepia hirta cristata*, and *Acrophora chærophyllus*. The winner of the second prize was Mr. S. Reece. Mr. J. Lambert showed well-grown examples of *Selaginella lævigata umbrosa*, *hæmatodes*, and *cæsia* in the class for six Lycopods, for which he was awarded a first prize, Mr. J. Rhoden, gardener to C. Vavasour, Esq., coming in second with small but creditable plants. *Caladiums* formed a prominent feature in the Show. The first prize collection in the class for six embraced large and beautifully coloured specimens of *Herold*, *Bicolor splendens*, *Beethoven*, *Chantini*, &c. They were exhibited by Mr. T. Aley, gardener to R. Keisey, Esq. The second prize went to Mr. C. Nunn, gardener to J. Soames, Esq., and the third to Mr. J. Dobson. In the class for four kinds Mr. Newnham was first, and Mr. Mullens second. There was only one competitor in the class for four Heaths, Mr. S. Reece, who was deservedly awarded the first prize for large and well-flowered specimens.

Perhaps the greatest feature of all in the Show were the Gloxinias. A special prize was offered by Messrs. James Carter & Co. for the best four pots of Gloxinias in bloom, and this brought together some really grand plants. Those which were awarded the first prize were fully 2 feet in diameter, and each plant carried on an average fifty blooms—examples reflecting the highest credit on the exhibitor, Mr. R. Sholdice, gardener to R. P. Barrow, Esq. Scarcely less noteworthy were the second prize specimens shown by Mr. J. Rhoden; and those by Mr. S. Reece, which gained the third prize. There were some good specimens shown in the class for six by Messrs. Barker, Sholdice, and Rhoden, who were the respective winners in the order of their names. For a specimen plant in flower Mr. C. Nunn was first with *Stephanotis floribunda*; Mr. J. Mullens second; and Mr. Reece third. Mr. W. Jeffery occupied first place for four stove and greenhouse plants in flower, Mr. C. Nunn being second. For the same number of foliage plants the first prize was well won by Mr. Barker, the second by Mr. C. Nunn, and the third by Mr. J. Mullens. Orchids were very good. Mr. J. Barker, gardener to C. Hemmerde, Esq., was first for four specimens, these being *Cattleya Mossiæ*, *Ada aurantiaca*, *Dendrobium suavisimum*, and *Brassia verrucosa*; and Mr. Hudd second. In the class for a single specimen Mr. Hudd was first with *Dendrobium Pierardi*, and Mr. Barker second with *Cypripedium barbatum*. Fuchsias are always in good condition at this Show. The chief prizewinners were Messrs. Dobson and Hudd. Space will not permit us to enumerate in detail the other classes; we cannot therefore do more than say that the principal prizewinners in the classes for Pelargoniums were Messrs. Jeffery, Reece, Hudd, and Dobson; and for miscellaneous classes Messrs. Nunn, Sholdice, Helmer, and Payne.

Roses were very good considering the rough weather experienced previous to the Show. The first prize for forty-eight varieties, single blooms, was won by P. Burnand, Esq., Reigate, the only competitor in this class. Messrs. Bunyard & Co. were first for twenty-four, P. Burnand, Esq., and Mr. Barker being second and third. For twelve, the respective winners were Messrs. Burnand, Bateman, and Cole; and for nine, Messrs. Bateman and Barker. Messrs. Lambert, Saville, and Nunn were the three prizewinners in the class for three stands of cut flowers; Messrs. Shrubbs and Hudd for a box of cut flowers; and Messrs. Shrubbs, Cole, and Nunn for hand bouquet.

Fruit was not over-plentiful. Some creditable bunches of black and white Grapes were, however, exhibited by Messrs. Goddard and Payne, the former winning the first prize for the best three bunches of black, and the latter for the best three of white. For the best bunch of white, and the best of black, Messrs. Hudd and Payne were the chief winners. Messrs. Reece, Shrubbs, Jeffery, and Fox took the principal prizes for Strawberries and Melons, and Messrs. Fox, Payne, and Shrubbs for the collection of fruit.

Vegetables were fairly well shown, though not so numerous as they ought to have been. Mr. Fox won the chief special prize for the collection of vegetables, and Mr. Nunn was second, the produce being of good quality. Messrs. Merryweather's prize, a length of sphincter grip hose, offered for the best collection of vegetables and salad combined was won by Mr. C. Nunn. Messrs. J. Laing & Son's three prizes for the best six varieties of vegetables grown from their seeds was won by Messrs. Burgess, Rhoden, and Shrubbs. Mr. C. Nunn gained Messrs. Sharpe and Co.'s prize for the best collection of vegetable grown from their seeds. A special prize, a span-roof frame, offered by Messrs. Hayward & Co., Brockley, for the best six pots of Tomatoes in fruit, was deservedly won by Mr. Payne with well fruited examples of Golden Queen.

Besides the foregoing there was an extensive display of cottagers' and amateurs' exhibits, for which space cannot be found. Among the non-certificated groups were a fine batch of single and double Petunias, also double and single Begonias from Mr. H. J. Jones, Ryecroft Nursery, Lewisham; Begonias, &c., from Messrs. J. Laing & Co., Forest Hill; bouquets, sprays, &c., from Messrs. Garton Bros., Blackheath. Messrs. Hayward & Co. also showed a specimen of their span-roofed greenhouses. We may add in conclusion that the silver memorial cup, offered annually to the exhibitor taking the largest number of prizes, was won by Mr. J. Hudd, gardener to F. W. Prior, Esq., and that, in spite of the showery weather, there was an excellent attendance of visitors on both days.

TRENTHAM SHOW.—JULY 3RD.

UNDER the presidency of the Marquis of Stafford, and with aristocratic and influential patrons, an effective Committee, and energetic Secretary, the Trentham Horticultural Society is probably destined to become known far beyond the county of Stafford. The progress it has made in three years is remarkable. Cottage gardening has long been encouraged in and around Trentham, and prizes given for gardens and exhibited produce, but three years ago Mr. P. Blair determined to provide the inhabitants of the district with something more than a cottagers' show. He started without a penny, but with quiet persevering zeal obtained subscriptions that enabled £70 to be offered in prizes. The following year the sum was increased to £130, and this year to upwards of £250. A comprehensive schedule of ninety classes was issued, half of them open to all, and the result was a thoroughly representative Exhibition attended by 10,000 persons. The tents were packed with visitors, who had the privilege of passing through the extensive pleasure grounds and gardens, and attractive as these were, also the famous Grenadiers' band, which was engaged for the occasion, it was easy to see, however, that the Roses, fruit, and other exhibits commanded the most attention. There was a great display of Roses, a splendid show of fruit, and the same may be said of vegetables, as will be conceded when it is stated that Mr. Lambert of Shrewsbury was the second prizewinner in the three collections. A marquee was also devoted to plants arranged for effect, Mr. G. Williams, Manchester, well winning first honours and a valuable special prize offered by Messrs. Doulton & Co. It was a charming arrangement of tall Crotons and Palms on raised mounds of Ferns, with a few Orchids and other flowers interspersed amongst low plants of *Adiantum gracillimum*. Mr. W. Stevens, gardener to W. Thompson, Esq., Stone, secured the second prize of £5 with an attractive group, in which Orchids preponderated. But we must pass to the other sections of the Show.

ROSES AND CUT FLOWERS.—These were staged in great numbers by many exhibitors, and though the rain had marred several of the blooms, admirable boxes were placed in competition. This, in some of the classes, was extremely keen, and the adjudicators had no light task in apportioning the awards. Notably was this the case in the class for forty-eight blooms, distinct, in which, in addition to the prize of £6, a trophy of more than twice the value was provided by Messrs. W. T. Copeland & Sons. This was secured by Mr. Frank Cant, Colchester, through only, we understood, by five points out of a possible 280. Messrs. Perkins & Sons, Coventry, were second, the stands containing many fine blooms, and Messrs. Harkness & Sons, Bedale, a close third, with very fresh clean examples, but lacking in size. The Colchester varieties were as follows:—Alfred Colomb, A. K. Williams, Baronne de Rothschild, very fine; Camille Bernardin, Charles Lamb, Charles Lefebvre, Charles Darwin, Countess of Rosebery, Crown Prince, Constantine Tretiakoff, Duc de Wellington, Duchess of Bedford, Duchesse de Morny, Duke of Edinburgh, Earl Dufferin, Etienne Levet, Etienne Dupuy, Fisher Holmes, François Michelon, Heinrich Schultheis, John

Bright, La France, Madame Eugène Verdier, Madame Gabriel Luizet, Marie Finger, Marie Verdier, Marguerite de Roman, Marie Baumann, Mary Bennett, Merveille de Lyon, Mors. Mat Baron, Mrs. Jno. Laing, Pride of Reigate, Pride of Waltham, Prince Camille de Rohan, Rosieriste Jacobs, Star of Waltham, Sultan of Zanzibar, Ulrich Brunner, Victor Hugo, very fine; Viscountess Folkestone, Madame Isaac Péreire, Catherine Mermet, Cleopatra, Francisca Kruger, Madame Lambard, Niphotos, and Souvenir d'un Ami. In the class for thirty-six blooms, distinct, the English Fruit and Rose Company (Cranston's), secured the premier position, followed by Messrs. Perkins and Frank Cant in the order named.

In the class for twenty-four triplets, distinct, a special gift by Messrs. Minton & Co. of their beautiful ware, value £10 10s., was added to the first prize, and again Mr. Frank Cant was in the ascendant, though Messrs. Dickson, Chester, and Harkness, Bedale, exhibited remarkably well for the remaining prizes.

In the corresponding class for Teas the first and third prizewinners occupied the same relative positions, Mr. H. Merryweather, Southwell, being a good second. The blooms had suffered by the wet and stormy weather, yet were excellent. The Bedale examples were fresher, but small, including a good selection. In the twelve blooms of any variety class Mr. Frank Cant was first with a magnificent stand of Mrs. John Laing; Messrs. Dickson second with clean good examples of Merveille de Lyon; and Messrs. Harkness third with La France. Messrs. Cant were the winners in the Marie Baumann class, Messrs. Dickson and Frettingham following. Many stands of blooms were exhibited by local amateurs, but they cannot be enumerated.

Messrs. Perkins & Sons had the best epergne of Roses, and divided the honours with Messrs. Jenkins & Son, Newcastle, for bouquets. Mr. Elphinstone won the first prize for cut stove and greenhouse flowers with a beautiful stand, nearly all Orchids, Messrs. Crawford & Stevens following. Messrs. Cannell, Swanley; Laing, Forest Hill; and Pearson, Chilwell, contributed splendid Begonias and Pelargoniums, for which they are respectively famed; and Mr. Barlin, Didsbury, contributed effectively to the Show.

FRUIT.—For a collection of nine dishes, distinct, the Society's first prize and a special, value £5, given by Mr. Pilsbury, brought excellent competition, the prizes being awarded in the following order:—First, Mr. E. Gilman, gardener to the Earl of Shrewsbury, Ingestrie; second, Mr. J. Goodacre, Elvaston Castle Gardens; third, Mr. J. Edmunds, Bestwood Lodge Gardens, Nottingham. The produce was excellent, but taking note of individual dishes was out of the question in the surging crowd of visitors that flocked about ten abreast along the tables. In the class of six dishes we were a little more fortunate; the competition was again keen, and the produce of high quality. Mr. Allan, gardener to Lord Suffield, Gunton Park, secured the premier position with such Gros Maroc Grapes as have seldom, if ever, been seen. The berries were quite as large as first-class examples of Gros Maroc, and nearly as round. The Vine is grafted on the Frankenthal, and the stock has evidently influenced the produce. Remarkably fine also was Foster's Seedling on the same stock. The remaining dishes were wonderfully good and well coloured. Downton Nectarine, admirable Bellegarde Peaches, a capital Golden Perfection Melon, and enormous James Veitch Strawberries. Mr. W. Elphinstone, gardener to E. M. Munday, Esq., Shipley Hall, Derby, was an excellent second with well finished Grapes and good Peaches, Nectarines, Melon, and Strawberries. Third, Mr. J. Edmunds, also with a good collection.

In the Grape classes Mr. J. Wilkes, gardener to G. Meakin, Esq., Cresswell Hall, was first with large clusters. Mr. W. Elphinstone, an extremely close second, with smaller symmetrical bunches, and good and well finished berries. Mr. Bate, gardener to J. H. Harris, Esq., The Hayes, Stone, third with good examples. In the any other black variety class first honours fell to Mr. J. J. Craven, gardener to J. G. Morris, Esq., Liverpool, with large bunches and berries of Madresfield Court, Mr. Elphinstone closely following with smaller bunches superbly finished, and Mr. Allan third, both exhibiting Madresfield Court. Mr. Alsopp, gardener to Lord Hotham, Walton Hall, Hull, was first with Muscats, and Mr. Allan in the other white class with handsome Foster's Seedling. Mr. Elphinstone was first in the green or white flesh Melon class with a fine fruit of the Countess, the fifth time he has exhibited the variety, and secured as many first prizes. Mr. Allan was the leading exhibitor in the green flesh class. Other prizetakers for Melons were Messrs. Goodacre, Craven, Edmunds, and Turner. Peaches were splendidly shown, Mr. P. Blair, Trentham, securing the chief prize with grand examples of Royal George, Mr. Gilman being an exceedingly close second with superb fruits of Violette Hâtive, and Mr. Turner, gardener to B. Fitzherbert, Esq., Swynnerton, third, with a good dish of Bellegarde. In Nectarines Mr. Blair took the lead with a splendid dish of Lord Napier, Messrs. Bate and Gilman following with Violette Hâtive.

Strawberries of great size were exhibited by Messrs. Allen, Edmunds, and J. Crawford, gardener to J. Thorpe, Esq., Coddington Hall, Newark, who were adjudged the prizes in the order named, the two former showing Sir Joseph Paxton, the latter James Veitch. Mr. Wallis, Keele Hall, exhibited some seedling Strawberries, two of which were certificated, one of them being the result of a cross between Countess and British Queen, and the other between British Queen and President, and the Judges considered the combined properties of those varieties, both as regards size and quality.

VEGETABLES.—These were well and extensively staged for the prizes offered by the Society, also by Messrs. Sutton & Sons, and Messrs. Webb and Sons. Mr. Crawford, Coddington Hall, outdistanced his rivals in all

the collections, followed by such good cultivators as Messrs. Lambert, Wilkes, and Bate, but pressure on space forbids an enumeration of varieties. Mr. Edmunds staged very fine Mushrooms for Mr. Bason's prize.

This is a mere outline report of the salient features of a really good Show, which was opened by the Duke and Duchess of Sutherland. All the officials are to be congratulated on the success they have achieved, and which should stimulate them to renewed efforts another year. The Trentham Gardens are in admirable condition throughout. Orchids superb, Grapes abundant, and Peaches and Nectarines as fine as can be imagined; indeed, every department reflects the utmost credit on Mr. P. Blair.



EVENTS OF THE WEEK.—Rose shows still continue numerous. To-day (Thursday) the Birkenhead, Woodbridge, and Worksop societies hold their annual Exhibitions. Ulverston Show takes place on July 10th, New Brighton on July 12th, and Christleton on July 15th.

— **THE WEATHER IN THE METROPOLITAN DISTRICT** continues of the same dull character as recorded for the past week or two, and the frequent rains are causing damage to many crops. Strawberries in particular are suffering greatly; the fruit is decaying on the ground, and that gathered is so soft it suffers considerably in transit to the markets. The crop is a larger one generally, and as a consequence the fruit is being sold at very low prices; fine looking fruits are seen in the smaller shops and on the barrows at 2d. per lb.

— **GARDENING APPOINTMENT.**—Mr. G. Picker, late of Brans-ton Hall, Lincoln, has taken charge of the gardens of C. E. Shea, Esq., The Elms, Foot's Cray, Kent.

— A HIGHLY satisfactory Exhibition was held by the TEDDINGTON ROYAL HORTICULTURAL SOCIETY on Wednesday last, July 9th, in the grounds of Bushey Lodge. A comprehensive and liberal schedule was provided, and keen competition was obtained in all the principal classes, the quality of the exhibits being good, but the weather was very unfavourable.

— THE Royal Caledonian Horticultural Society loses its faithful friend, MR. JOHN STEWART, at the age of seventy-six, who for twenty-five years was Secretary to the above. His genial manner made him a host of friends, many of whom showed their respect by seeing him laid in his last resting place, the beautiful cemetery of Inveresk, near Edinburgh, on July 4th.—A. O.

— **FRUIT PROSPECTS.**—An extensive Clydeside fruit grower informs me that Apples will be scarce, Pears an average, and Plums under an average crop. Gooseberries are fair, and Strawberries a moderate crop. A Strawberry grown there under the name of Garibaldi has ripened again earlier this year than Vicomtesse Héricart de Thury, proving it to be a distinct variety.—W. T.

— THE ROYAL BOTANIC SOCIETY'S FLORAL FETE last week proved very successful, the weather continuing favourable until late in the evening, and there was a large attendance of visitors. The competition in the floral decoration classes was unusually keen, especially with bouquets, which afforded one of the finest displays the Society has ever had. Tables, stands of flowers, and baskets of plants were also numerous, and included some exceedingly tasteful exhibits.

— **SUTTON ROSE SHOW.**—We are favoured with a report of the Sutton Rose Society's Show on the eve of going to press, and can, therefore, only find space for a brief reference to the principal features. Mr. Frank Cant, Braiswick Nursery, Colchester, was victorious in the open class for thirty-six blooms, having a large, even, and fresh lot of flowers; Messrs. Paul & Son, Cheshunt, being second; and Messrs. G. & W. H. Burch of Peterborough third. Mr. Frank Cant and Mr. Prince of Oxford were placed equal first with twelve Teas, Messrs. Paul and Son following. In the amateurs' classes Mr. E. B. Lindsell, Hitchin, showing very finely, carried off the lion's share of the prizes, being first for twenty-four, twelve, and eight trebles, other prizewinners being Messrs. Slaughter, J. G. Fowler, F. Pawle, E. Wilkins, P. Burnand, C. J. Graham, and the Rev. A. Cheales. The local classes were not very well filled. The table decorations, bouquets, and sprays formed an attractive feature.

— **THE LATE MR. B. S. WILLIAMS.**—Much to my regret I was prevented from paying the last tribute of mourning regard to my old friend. On Thursday last I met at the Trentham Flower Show Mr. F. Sander of St. Albans, who suggested that something should be done to perpetuate our departed friend's memory, and that it should take the form of a medal similar to the Veitch medal. I quite agree with the suggestion, and shall be most happy to do all in my power to assist in carrying out this most desirable object. Mr. Williams always took a most lively interest in horticultural exhibitions, and no one contributed more to their success, and no one was more highly esteemed amongst horticulturists of all grades. The main cause of this was his naturalness. There was nothing assumed (or to use a figure of speech in common use in the present day) he put "no side on," and in this respect I think all of us may learn an important life lesson summed up in two words, "Be natural." I am not wedded to the medal idea, the money might be devoted to the Gardeners' Orphan Fund, but this, of course, is a matter of detail which the trustees appointed would determine to the satisfaction of all concerned.—BRUCE FINDLAY, *Manchester*.

— **THE TOTAL RAINFALL AT CUCKFIELD, SUSSEX,** for June was 2.86 inches, or 1.06 inch above the average. The heaviest fall was 0.57 on 30th, rain falling on seventeen days. Highest shade temperature 75° on 24th, lowest 42° on 28th. Mean maximum 65.1°, mean minimum 48.1°, partial shade readings 3.2° under the average. A very unsatisfactory month. Much soft fruit will be spoiled if more sunny weather does not come soon.—R. I.

— **ROSES AT WINCHESTER.**—At the Show of the Winchester Horticultural Society, held on Tuesday last, there was a remarkably good display of Roses, but a report of the Exhibition cannot be published in the present issue. Mr. B. R. Cant was first in the forty-eight distinct class, Mr. Frank Cant closely following, also in the Tea and Noisette classes. Messrs. Keynes, Williams & Co. staged the best twenty four H.P.'s, and Messrs. Perkins the best stand of dark Roses—A. K. Williams. Mr. Flight was a leading exhibitor in the amateurs' classes.

— **THE WEATHER IN JUNE.**—The past month here has been truly a dripping one. Rain has fallen frequently, yet we have had an abundance of sunshine. The month on the whole has not been marked by any extremes of temperature, which has for the most part remained very steady and even, the highest point the thermometer reached being 79° in the shade on the 24th ult.; the lowest reading was 42°, on the morning of the 2nd. Rain has fallen upon sixteen days, maximum for any twenty-four hours being 0.62, on the 13th; minimum 0.01, on the 23rd; total amount during the month, 2.71. Notwithstanding the beautiful weather we have had insects have been abundant.—E. WALLIS, *The Gardens, Hamels Park, Buntingford*.

— **NURSERYMEN AND MOSQUITOES.**—A well-known local newspaper of West London, the *West Middlesex Advertiser*, has published in a recent issue a letter from a much aggrieved correspondent, who complains bitterly of his sufferings from mosquitoes. He has been bitten many times, once so seriously that an eye was closed up for awhile, and he had to stop away from his business; others also in his neighbourhood have been sufferers similarly. It would not certainly have been of much use to write a letter in abuse of the insects, but the author of it thinks he has discovered the source of the grievance; it is the nursery gardens and plant houses at the west of London, more particularly at West Chelsea. The proprietors, so he says, import a great variety of exotic plants, and with these the insects so much complained of. If this persecution by the mosquitoes continues, he believes many of the inhabitants will be forced to remove, and he therefore longs for the departure of the nurserymen and their plants. I have not been as yet able to visit the spot and make personal inquiries, but do not hesitate at once to assert that the allegation appears to be absurd. Entomologists have refuted over and over again the statements concerning the occurrence of the mosquito in this country, the bites attributed to this species being really caused by one or more of our native species belonging to the same family. At certain seasons these flies, notably the common gnat, are unusually abundant, and their bite has remarkable virulence, the reason of which has not been discovered. Possibly an occasional stray mosquito reaches these shores on board some vessel, but these stragglers do not breed here. Even if colonies of mosquitoes could be imported, it would be impossible for them to be introduced with foreign plants, I should think, in the way supposed, the habits of the species being quite opposed to it. Be this insect plague what it may, I do not see how the nurserymen can be made the scapegoats.—J. R. S. C.

— THE STRAWBERRY IN MALTA.—Mr. Hibberd alludes to the wild Strawberry having been cultivated in England in the sixteenth century. It may interest your readers to know that the Maltese still grow it under the name *Frauli comuni*. It has been introduced, as also *Fragaria chiloensis*, which they call the "English Strawberry," or *Frauli inglesa*. I came across a small patch of the former species in flower in February, but it was apparently much the same as our wild form. I have not seen the fruit. No other kinds are generally cultivated.—G. HENSLOW.

— ROYAL HORTICULTURAL SOCIETY.—A Conference and Great Exhibition of Carnations and Ferns will be held in the Society's Gardens at Chiswick on July 22nd and 23rd next. The National Carnation Society offers several prizes for Carnations and Picotees, and two silver challenge cups will be awarded to amateurs by the R.H.S.—viz., one for the best collection of hardy Ferns, the other for the best collection of Filmy Ferns, grown without heat. The Conference on Carnations will begin on the 22nd inst. at 2.30 P.M., and the following papers will be read—viz., "The Carnation from a Botanical Point of View," by Mr. F. N. Williams, F.L.S.; "The Florists' Carnation and Picotee as Exhibition Flowers," by Mr. Harry Turner; "Carnations and Picotees in Towns," by Mr. Martin Rowan; "Border Carnations," by Mr. Richard Dean. On the 23rd the Conference on Ferns will open at 2 P.M., and papers will be read as follows:—"The Systematic Relations of Ferns," by Professor Bower, F.L.S.; "Hybrid Ferns," by Mr. E. J. Lowe, F.R.S.; "Plumose British Ferns," by Mr. C. T. Druery, F.L.S.; "Hardy Ferns and their Cultivation," by Mr. J. Birkenhead. Intending exhibitors are requested to communicate with Mr. Barron, Superintendent R.H.S. Gardens, Chiswick, on or before Friday, July 18th, stating the classes in which they propose exhibiting, and giving an approximate idea of the amount of space they will require.

— THE INCLEMENT WEATHER.—Saturday was one of the most boisterous and inclement July days we have had for a long while past. On Friday night a small cyclonic disturbance, which lay in the morning off the north-west of France, advanced steadily in an east-north-easterly direction along the English Channel. In many districts trees were uprooted, and considerable damage was done to fruit orchards and standing crops. In London, and over our eastern and south-eastern counties generally, the squalls occasionally reached the force of a moderate to fresh gale, the high wind being accompanied by a steady downpour of cold rain. Later in the day the depression travelled away to Holland, and the wind rapidly subsided. The weather also exhibited decided signs of improvement, but the latter change was very gradual, the air remaining raw, cold, and unpleasant throughout the remainder of the day. In London the maximum temperature was as low as 57°, or 16° below the average for July. Saturday was, in fact, with one exception the coldest July day we have had in London during the whole of the past twenty years, and at least 5° colder than in thirteen out of the twenty. The solitary exception occurred on the 11th of July, 1883, when the thermometer in London never rose above 54°, and when also the occurrence of snow was reported in many parts of the country. The aggregate amount of rain which fell during the passage of Saturday's depression was very large. At Dungeness there was a total of 1.2 inch, in London and at Yarmouth 1.4 inch, at St. Aubins, Jersey, 1.5 inch, and at Cape Grisnez 1.9 inch, while at Lynsted, near Sittingbourne, as much as 2.9 inch is said to have fallen up to Saturday morning. In the London district and some other parts of our south-eastern counties the aggregate rainfall for June was heavier than in any year since the disastrous season of 1879, and the opening days of July have certainly brought us no amelioration. The hay harvest has already been partially ruined, and unless an early change to more genial weather takes place the damage to grain crops will be simply irreparable.—(*Daily Paper*.)

MISAPPLICATION OF FLOWERS.

COMMONLY enough it occurs that where public taste sets in favour of any one article, some injudicious friends of that article do it considerable harm by advocating its claims to an extent not warranted by its merit. Many new and useful plants have been blighted in public opinion by too much having been said in favour of them by some indiscreet admirer, whereas a true and unprejudiced narrative of their worth might have retained them an honourable place.

It may appear unkind to check the unbounded admiration of certain enthusiasts, yet it sometimes happens that by their laudations they do more harm than good; looking at only one side

of the picture they forget to point out any defect it may have, or in their zeal to advocate its cause cannot see any, and consequently thrust forward their favourite for a purpose it is not suited for, and the public being disappointed will not give it credit for what it really possesses.

Numbers of new bedding plants have after trial passed into neglect, the character given of them not being fulfilled in their growth and appearance. Perhaps one good feature in this is that old and tried good kinds are the more thought of when new ones have failed. But there are other cases in which the ardent admirers of the beautiful threaten to do harm to their cause as well as in their advocacy of new plants or varieties of them, and that is in no less a matter than the almost universal purposes to which flowers are now put—purposes which, I fear, must tend to create that indifference if not dislike to them which all interested in their culture must deplore.

Although it is next to heresy to breathe a syllable against flowers, nevertheless they are sometimes introduced where their presence can hardly be otherwise than inconvenient, if not an absolute nuisance. For instance, some kind visitor will intrude a bundle of strong-scented flowers into a sick room, or perhaps a bedroom, while the sitting and other rooms are so profusely garnished with flowers that the legitimate fittings there are disregarded. It is certainly not my purpose to say much against the dinner table being ornamented with tasteful displays of flowers, but a too great profusion must be contrary to good taste, and some of the contrivances adopted to exhibit the flowers partake so much of the toy character that I should predict that they are likely to have a very short reign. In fact, the design for this class of ornament is only yet in its infancy, and no doubt when it settles down into something like a channel that will accord itself with other things, we shall look back and wonder at the monstrosities that are now countenanced.

Not very long ago at a table of some pretensions I noticed every dish and object had flowers or foliage stuck upon it. Even the hot viands emitted their steam against fast-fading blooms of exotics, while stands for plants were scattered with a profuse hand over the centre and side tables.

Now, though this is unquestionably the age for embellishment, some discretion must be exercised in its use, for assuredly ornament too profusely employed ceases to deserve the name. Flowers, fruit, and foliage are all pleasing objects to look at, but they are not to be tolerated when out of place; and when every mantelpiece, bookshelf, table, and other such places are crowded with flowers the eye becomes tired of the monotony, and all delight in their presence is lost. Flowers are also sometimes placed where existing things tend to destroy their effect—as, for instance, where a stand of cut flowers is placed against a wall that is covered with a paper of a high-coloured floral pattern, the real contending against the sham. But let us leave this department, and, emboldened by our attack on flowers where misplaced, let us pry into another quarter where they are at the present moment exceedingly popular, and see if good taste, utility, and the other conditions that govern all prudent measures will assign them a place there.

Pardon me, ye ladies, to whom all lovers of flowers look for support and encouragement, if one of the purposes you put them to should meet with undue censure; for I confess I intend to be rather severe, and when I say I mean to attack no less a feature in your pet arrangements than the bouquets you so fondly caress I fear I am bringing a frown upon myself which I by no means invite. Perhaps I may be too much of a utilitarian, and look at things only with a view to what useful services they are likely to perform; if so, my attack on hand-bouquets must only be taken for what it is worth; but I certainly aim at something better than mere condemnation, I should like the thing reformed. Let us take an example, and an ordinary one.

For a lady of rank prepared for a ball one of the requisites of the present day is a bouquet in the shape of the shield of Achilles, and nearly as large. The bouquet is made as symmetrical as if it were cast in a mould, and as stiff and formal as if it were formed of earthenware or cast iron. Its bulky proportions give quite sufficient employment to one hand to hold it; and though sometimes the courtesies of a partner may be agreeably called into play in holding it for a time, it nevertheless requires almost as much nursing as a baby. If laid on a seat it certainly may not occupy so much room as the lady herself, but will take up quite as much as her partner, and it is an endless source of concern and anxiety, and finally, perhaps, occasions some little disaster to the dress by being attached to the side for security; or perchance getting upon the floor, an accident of another kind is the result. All these things and many others are of everyday occurrence where huge hand-bouquets form portions of ladies' ball equipments; and what compensation do they offer for the discomfort? The odour of the flowers may be urged in their favour; but very often such bouquets

are made more for appearance than for the scent; in fact, that of some flowers so used is disagreeable rather than otherwise. That they are of gay colours is also urged as a recommendation, but so also are very often the dresses of the fair ones who carry them; and it rarely happens indeed that any regard is paid to the contrast between the dress and the bouquet so long as the latter is formed of rare and costly flowers.

In thus complaining of bouquets as they are formed at the present time I by no means find fault with them on all occasions. A neat bouquet, not too large and unwieldy, may be a fitting, perhaps necessary, accompaniment to a lady in a carriage or when going to a levée; but for a ball could not a few sprigs be neatly fastened to some prominent portion of a lady's dress so as not to inconvenience the wearer? The little knot in a gentleman's buttonhole affords a very good example, and looks well; and that ladies should go somewhat further is excusable enough, but the excess so often run into is inexcusable, as the discordant elements the bouquets are composed of, and the highly artificial form they assume, give them all the appearance of being made of some of the various compositions that imitations are so cleverly carried out in. Assuming flowers to be real, would not a tithe of those now used in the making of a fashionable bouquet effect the same object? and would not the effect be better?

Much more might be said against the use of flowers for purposes to which they are so incongruously applied; and beautiful as they are in most cases, I would warn their greatest admirers not to use them in too great numbers in places where they are not wanted, or where the conditions of other things seem to call for something else instead; for by so doing they disgust rather than please the discriminating eye of true taste, and instead of extending the patronage of floral display they diminish it; for, as before said, ornament too profusely applied ceases to deserve the name. Let the best friends of Flora, therefore, beware that in introducing flowers everywhere they do not sacrifice good taste. By a judicious disposal of a less quantity they alike cultivate a higher and purer taste, and perpetuate the love of floriculture.—S.

THE LATE MR. GEORGE DEAL.

WHAT a great loss our new born institution, the Gardeners' Orphan Fund, has sustained! I can even now scarcely realise it, after having at Brookwood, on Saturday, seen the grave close over all that remains of our dear friend and leader. I was somewhat taken aback at Brookwood when scanning the numerous faces, to find I was the only member of the Committee present. I afterwards heard of the London service. We must be up and doing something worthy of the memory of our good friend, and I feel sure if it were possible to have asked him in what way we could do him honour, he would have said, "Save the little ones." Let us then have a memorial election, and thus perpetuate the memory of him whose loss we deplore.—C. H. SHARMAN.

[There appears to have been no time for concerted action with a view to the attendance of the members of the Committee at the funeral. Mr. Deal enjoyed the fullest confidence and esteem of his co-workers, and all of them deplore his loss most keenly. The suggestion made by our correspondent appears highly appropriate, for Mr. Deal was devoted to the interests of the Fund, and most anxious to afford relief to the needy orphans of gardeners, which he knew were more numerous than was generally suspected; and it is a source of regret that several candidates cannot be elected as beneficiaries of the Charity during the present year. Mr. Sharman's suggestion is commended to the consideration of those of our readers who may desire to share in establishing a fitting memorial to a good man.]

PENTSTEMONS.

THESE plants have been improved to a marvellous degree during the past few years, and those who grow old sorts would be astonished at the advance alike in colouring, size of flowers, and length and closeness of spike that has been effected. A pure white variety fifteen years ago was something to sigh for, and the white varieties so called which were raised and distributed, had small shapeless blooms. Now white varieties, and those almost white, are of the largest size, good form, and among the most beautiful of flowers. Mont Blanc, Madame Dieulafoy, Esmeralda, and Serenade are examples of these, and each of great beauty. Then in addition to the varieties with pure centred corollas, to which the above belong, Scotch florists worked mainly on those with throats barred or striped, the best example of which is James Cocker, a most telling variety, Mrs. Westcott being a sort with a denser

marking. But a quite distinct group has been originated on the Continent, the marking on the throat or inside of the tube being a dense mass of colour, the best, though not the largest, variety in this group being Derviche. Fairly good flowers can be raised from seed of the ordinary strain, the best seed which I know is that sold as Lemoine's strain.

The seed is sown in much the same way as Lobelia, the earlier in the year the better; pricking the seedlings out into boxes as they arrive at a size easy to handle, and in due course transplanting in April or May into the beds in which they are to flower. But good named varieties are so easily grown and increased, and the effect is so much better, that I do not care much for seedlings. It may not be generally known, but it is a fact, that Pentstemons are among the best of hardy plants for massing in beds or for bold lines in large borders, and with named varieties we can select suitable colours and be sure of the result. Indeed, except in cases where growers keep plants for producing exhibition spikes, the best way to grow these is for bedding. They are of only slight value for cut flower purposes, as they droop quickly, and then they never recover. There is a way of preserving them, and that is by cutting early in the morning, and inserting the cut end of the stalks directly into a vessel of water, which must be ready for their reception as soon as cut, but the flowers keep fresh such a short time even when so treated that it is hardly worth while taking them into account as producers of bloom for furnishing.

Cuttings are inserted as a rule at two seasons, the first in summer in a cold frame shaded, to be potted in autumn, in order to secure strong plants to begin flowering in early summer; the other about the middle of October in a cold frame kept close, which form rooted plants in the same time as Calceolarias, and are planted in the same way at latest in the beginning of April, the tips of the growths being pinched out in order to produce a plant of some five or six spikes. Though they will grow well in poor soil Pentstemons at the same time require good treatment. The summer treatment consists in placing a short stout stick to each plant, the cluster of rising spikes being secured to it with raffia, and when the spikes show signs of exhaustion they are cut off, the back growths coming forward to take their places.

The following are a few of the best sorts for growing for strictly decorative purposes. L. Kuntze, A. Daudet, M. de Cherville, Tartarin, Ch. Robin, Claude Gélée, Esmeralda, Serenade, Emile Paladilke, Miss Buck, A. Forbes, Mrs. Westcott, A. Sinclair. Where plants stand the winter, which they do in most seasons, the shoots require some thinning out in spring in the case of old plants. The good resulting from this is seen in stronger spikes and a longer continued season of flowering than when they are left to flower unthinned. These old plants 3 to 5 feet across are much superior in effect to young plants, and where they survive the winter they should be, on that account, allowed to remain for a few seasons.—N.

ROYAL HORTICULTURAL SOCIETY.

JULY 8TH.

ROSES, hardy flowers, Lilies, and Orchids were the chief features in the floral display on Tuesday last at the Drill Hall. The show of fruit was also excellent, the Cherries and Peaches from Messrs. T. Rivers & Son, and the Strawberries from several exhibitors being uncommonly fine.

FRUIT COMMITTEE.—R. D. Blackmore, Esq., in the chair, and Messrs. P. Crowley, Harrison Weir, G. Bunyard, J. Willard, T. Saltmarsh, G. Wythes, J. Hudson, H. Balderson, F. Q. Lane, T. Francis Rivers.

Messrs. T. Rivers & Son, Sawbridgeworth, had a grand collection of Cherries, fine Peaches, Jefferson and Monarch Plums, Goldoni Nectarines. Altogether twenty-nine dishes were staged of remarkably fine fruits (silver Banksian medal). Mr. H. Ridgewell, Cambridge, sent a collection of Strawberries, and an award of merit was granted for Strawberry Incomparable, noted last week (cultural commendation). Messrs. J. Veitch & Sons sent thirty-two dishes of Strawberries, representing as many varieties (bronze medal). Mr. W. C. Leach, Messrs. Bunyard & Co., and Paul & Son, Cheshunt, also exhibited collections of Strawberries (bronze medal).

Strawberry Auguste Boisselot (Paul & Son).—Fruits broad and somewhat flat, light bright colour, firm, and of a brisk pleasant flavour (first-class certificate).

Fig St. John (Messrs. James Veitch & Sons).—An extremely early variety, said to be the earliest in cultivation, retaining its crop for a long time. The plant was the same as that shown at the Temple on May 28th. The fruit is oval, even, and of good size (first-class certificate).

Cucumber Allan's Favourite (Mr. W. Allan, Gunton Park

Gardens, Norwich).—A long, even, spineless Cucumber, slightly ribbed; very handsome (award of merit).

Melon Seedling (Major C. W. Heneage, V.C., Compton Bassett, Calne; gardener, Mr. W. A. Cook).—A large globular fruit, with deep green skin, coarsely netted, the flesh scarlet bright, and good flavour (award of merit).

Melon Syon House Seedling (Mr. Wythes).—An oblong Melon, scarlet flesh and yellow skin, slightly netted; flavour good (award of merit).

Melon Highlands Hybrid (J. F. Wilkinson, The Gardens, Highlands, Minchin).—A scarlet flesh globular Melon, beautifully netted, the flesh deep, and good flavour (award of merit).

FLORAL COMMITTEE.—Present: W. Marshall, Esq., in the chair, and Messrs. Shirley Hibberd, H. Herbst, J. Walker, W. C. Leach, H. B. May, T. W. Girdlestone, H. Cannell, B. Wynne, T. Baines, C. Noble, J. Fraser, C. T. Druery, W. Holmes, W. Goldring, F. Ross, G. Nicholson, and Dr. M. T. Masters.

Messrs. J. Veitch & Sons, Chelsea, contributed an interesting collection of hardy flowers, together with some choice shrubs, including *Robinia glutinosa*, *Indigofera decora alba*, *Genista capitata*, *Ptelea trifoliata aurea*, and *Stuartia Pseudo-Camellia*. Varieties of *Anthuriums* Rothschildianum and *Rhododendrons* were also shown (silver Banksian medal). Messrs. H. Cannell & Sons, Swanley, sent a collection of single and double Tuberous Begonias and a double scarlet Zonal Pelargonium named Turtle's Surprise, very free and of good habit (award of merit). Mr. T. S. Ware, Tottenham, had a group of *Liliums*, comprising specimens of about fifty varieties, *L. pardalinum*, *L. davuricum*, *L. elegans*, *L. martagon*, *L. Hansonii* and *L. tenuifolium* being the principal types represented (silver Banksian medal).

From Lord Rothschild, Tring Park, Tring (gardener, Mr. Hill), came a group of about seventy plants of *Carnation Germania* bearing large numbers of large, well formed, pure, soft yellow flowers. This variety is found to be one of the best yellow varieties grown at Tring, free in flowering, strong in habit, and constant. The group was margined with small Ferns and Palms at the back, and had an excellent appearance (silver-gilt Banksian medal). Mr. G. Wythes, gardener to the Duke of Northumberland, Syon House, Brentford, sent flowers of *Stuartia virginica* and *Clethra arborea*. Mr. W. C. Leach, The Gardens, Albury Park, Guildford, exhibited a group of seedling *Alstroemerias* and *Pentstemons*, comprising many varieties distinguished by rich colour. Messrs. Paul & Son, Cheshunt, exhibited nine boxes of handsome Rose blooms in many varieties (silver medal). Messrs. Barr & Son, King Street, Covent Garden, had a group of hardy flowers (silver medal). Mr. H. J. Jones, Lewisham, had a group of *Petunias*, *Pansies*, and *Ferns*, together with several dishes of *Tomatoes*. Mr. H. Eckford, Wem, Salop, had a stand of Sweet Peas, including extremely pretty varieties. Mr. J. Hall, Cambridge, sent several varieties of *Scolopendrium vulgare*, *alcicornioides* being very peculiar. From the Society's gardens came several *Babianas*, *B. rubro-cyanea* having deep purple and red centre (first-class certificate). A commendation was adjudged for some fine Canterbury Bells from Mr. R. Dean, Ealing.

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq., in the chair, and Messrs. T. B. Haywood, J. Douglas, F. Sander, Lewis Castle, E. Hill, C. Pilcher, J. Dominy, W. Ballantine, H. M. Pollett, J. O'Brien, De B. Crawshay, and A. H. Smee.

Sir Trevor Lawrence, Bart., Burford Lodge, Dorking (gardener, Mr. W. White), showed plants of *Aganisia cyanea*, certificated as *A. coerulea* in August, 1885, the flowers a delicate blue tint like *Vanda coerulea*, with a peculiar brownish lip; *Bulbophyllum grandiflorum*, with large purplish reticulated flowers, and *Sarcopodium psittacoglossum*, with small yellowish red veined flowers, and a deep crimson lip.

Messrs. F. Sander & Co., St. Albans, showed plants of *Cattleya Sanderiana*, *Cypripedium Rothschildianum*, and *C. Elliottianum*; *Oncidium hastatum* var. *Ernesti*, and *Aerides expansum* *Leonæ*, with four long racemes of flowers (cultural commendation).

PLANTS CERTIFICATED.

Cypripedium hybridum Youngianum (F. Sander & Co.).—A hybrid from *C. superbians*, crossed with *C. Roebelinii*, having large flowers; the dorsal sepal white, veined with green; the petals long, drooping, broad, dotted with deep crimson, and having a few dark hairs on the margin. The lower sepal is white, with fresh green veins, the lip of soft greenish tint, and the staminode reticulated with green. A distinct and beautiful Orchid.

Lalia grandis (F. Sander & Co.).—The true *L. grandis*, with strong upright pseudo-bulbs, and broad leaves; the flower having light and bright brown sepals and petals of nearly equal size; the lip is deep purplish crimson in the throat, lighter towards the

margin, with veins running through to the edge (first-class certificate).

Cattleya Mossiæ × *Dowiana* var. *Empress Frederick* (Baron Schröder).—A charming hybrid with large showy fragrant flowers, the sepals and petals pure white, the lip broad, rounded, intensely rich crimson, edged white, with a deep yellow throat, dwarf in habit and free, the plant having fine flowers (first-class certificate).

Masdevallia Schröderiana (Baron Schröder).—An imported species which flowered last year for the first time. It has large flowers, purplish crimson, white in the centre of the lower sepals, the tails long, slender, recurving and yellow (first-class certificate).

Zygopetalum crinito-maxillare (Lord Rothschild).—A hybrid from the parents included in the name, the sepals and petals small, green, with many brown spots, the lip small, rounded, deep purplish blue (award of merit).

Gloxinias (Veitch).—*Nestor*, bright scarlet, finely formed flowers; *Gaiety*, crimson, edged white, centre dotted with crimson on light ground (award of merit).

Zingiber D'Arceyi.—A species from the South Sea Islands; the leaves bright green, edged white. A bold variegated plant, and free in growth (award of merit).

Spiræa bumalda variegata (J. Veitch & Sons).—A pretty little shrub with small narrow green and yellow leaves, and bright red flower buds (award of merit).

Rosa polyantha The Engineer (Mr. J. T. Gilbert, Bourne).—Flowers bright red, small, but very freely produced.

Carnation Mrs. Sanders (Mr. H. J. Jones).—Flowers bright yellow, of good size and shape, freely produced. Plant of good habit.

Sweet Pea Dorothy Tennant (Mr. H. Eckford).—Flowers pale purplish mauve. *Stanley*, red and pink, very bright.

THE REV. H. H. D'OMBRAIN.

NOT only will the members of the National Rose Society welcome the appearance of the portrait of the founder of the Society in what it pleases so many readers to describe as the "Rose Journal," but to persons far and wide who are interested in floriculture its presentation will be equally acceptable. It, moreover, seems fitting that the portrait should appear in an issue that contains the record of one of the great Exhibitions of the National Rose Society, and we have very great pleasure in thus introducing "D., Deal," to a much wider circle of his friends and admirers—and there are many—than those who rejoice in his personal acquaintance. We are making no disclosure in this reference, for Mr. D'Ombrein told the readers of the Journal several years ago on his removal from Deal to another charge that, though he had changed the scene of his labours, he should not change the *nom de plume* that had then become so familiar to the readers of the pages to which he has now regularly contributed for thirty years. When we consider the great variety of subjects he has treated in that time, and especially as these naturally come round in the yearly cycle of flowers, and have to be dealt with again and again, we cannot but marvel at the wonderful sustaining power of the veteran florist. Mr. D'Ombrein has told us he was born in 1818, yet his pen is as active and his writings are as fresh as the flowers he loves when these are in their youthful beauty.

We cannot say that Mr. D'Ombrein was a "born florist," for born in Ebury Street, Pimlico, he could scarcely be surrounded with flowers in his earliest days, and we believe it was not until he entered on his college career in Ireland that the floral chord was touched, and this by a bed of *Ranunculuses* in a garden near Dublin. His love for flowers at that now far past time was very real and deep, and it has proved enduring. Nor were flowers alone objects of his study, for while at the University he founded the Natural History Society of Dublin, and became its Secretary. The Society numbered among its members some of the best known naturalists of Ireland, and Archbishop Whateley often attended its meetings. To this Society Mr. D'Ombrein on leaving Dublin for the curacy of Bray presented a good collection of Irish birds.

For years he could only indulge in floriculture under difficulties. At Deal his garden was simply a slice taken off a field, and at Bray he had to grow flowers on the top of a cliff, swept by every wind that blew, yet from these unsheltered plots he derived far more pleasure than the majority of garden owners enjoy with the aid of immeasurably greater natural advantages and artificial means. But though the field of his experience was thus limited, his "sphere of influence" became great, bounded only by the limits of civilisation. Loving flowers earnestly, and finding them repay by the pleasure they gave him for his fostering care, he wished that others should share in that which made the world happier and brighter for him. Untiring industry and a facile pen accomplished to a large extent the object of his hopes, for undoubtedly "D., Deal," has by his

writings given an enormous stimulus to floriculture, and induced more persons than he can ever know to engage in the delightful pursuit of gardening. Amateurs innumerable have been encouraged by him to persevere under difficulties and succeed, and not a few gardeners have obtained useful hints from his suggestive observations.

Probably if Mr. D'Ombraïn were asked to name what he considers the most notable events in his horticultural life he would be inclined to answer—the establishment of the Horticultural Club and the founding of the National Rose Society. We think we are right in saying that the Club was the outcome of a *Journal of Horticulture* dinner, over which editors and staff enjoyed pleasant converse. The Club has been a great success, and was never so strong as it is now. It was at a meeting of persons interested in Roses held at the Club on the invitation of Mr. D'Ombraïn in December, 1876, that the National Rose Society was founded under the presidency of Canon Hole, now Dean of Rochester. It commenced under happy auspices, and is now one of the most firmly established, influential, and prosperous of the special societies which have given such an impetus to floriculture in this country. Those are important achievements, and it may be added that Mr. D'Ombraïn was the Editor of the "Floral Magazine" in its best days, from 1862 to 1873, a serial which he has happily long survived, and he has edited the popular and useful "Rosarian's Year-Book" since its commencement in 1879.

A famous divine who travelled much in furtherance of his great mission, and sojourned in many homes, was led to say, "You can never know what people are till you live with them," or words to that effect. That those who closely associate with Mr. D'Ombraïn esteem him has been twice demonstrated in the tangible form of valuable testimonials, the last of which was presented to him about a fortnight ago, as was recorded in our columns. All hope that it will remain with him, and that he will remain with us to enjoy a long and happy eventide after a long and useful life.

It is but only just to say that ardently as Mr. D'Ombraïn has been devoted to the pursuit of horticulture, it was never allowed to usurp the place due to the sacred office to which he had been called; indeed he has told us in our columns how helpful it had been to him in the cares and anxieties of a large parish. When at Deal he had built a school, and in his present sphere he has, at a time of life when many would think the work might be left to others, restored, at an expenditure of 2000 guineas, the beautiful and unique church of his parish.



MANNERS AND CUSTOMS.

I AM very glad to hear that my notes have been of any use to "J. B." I would gladly assist him further if I understood more clearly what he wanted to know. I certainly thought I got "to the end of the list of foremost Teas." Did he perchance not see the April numbers of the *Journal*? All the Roses he speaks of were commented on, and mention made as to whether they would probably succeed as dwarfs; but I could not and cannot say much about Princess Beatrice, T. I have had one good bloom of it this year, which I showed at the Aquarium, and I think at Reigate; but it requires heat, and will never come to any good without it. Cleopatra, T, is, I believe, one of the best Tea Roses issued for years.—W. R. RAILLEM.

ROSE SHOW FIXTURES, 1890.

- July 10th.—Birkenhead, Woodbridge, Worksop.
- " 11th.—Ulverston.
- " 12th.—New Brighton.
- " 15th.—Christleton.
- " 17th.—Birmingham (N.R.S.), Helensburgh.
- " 22nd.—Tibshelf.
- " 24th.—Salterhebble (Halifax).
- Aug. 2nd.—Ripley.

ROSE SHOWS.

THE NATIONAL ROSE SOCIETY.—JULY 5TH.

A DRENCHING rain and a storm of wind all Friday night was not the most desirable preparation for the National Society's great metropolitan gathering at the Crystal Palace on Saturday last, and the prospects at one time looked extremely gloomy. When the officials at the Palace assembled at 5.30 A.M. not an exhibit had arrived, and the array of unoccupied tables seemed likely to constitute the major portion

of the Exhibition for the day. Happily, however, a large number of rosarian exhibitors had been thoughtful enough to cut their Roses early on the Friday evening, and the flowers certainly suffered less in the boxes than they would have done on the plants. Consequently the arrivals numbered about six, and followed on rapidly, so that it was soon found the table space allotted to the Show would be fully occupied. The classes were well filled, and the quality generally far exceeded the expectations of the most sanguine.

The Show was indeed an astonishing one. The freshness of the blooms and the brightness of the colours were subjects of common remark. There were certainly rough blooms in most of the leading stands, but there were also larger average numbers of particularly fine blooms than usual, ample compensation for a little irregularity. Where, too, the stands had to be supplemented on Saturday morning the blooms showed evident signs of damage by wind and rain, the light Roses and the Teas also displaying these effects more noticeably than the Hybrid Perpetuals. Still, the general verdict was "a grand Show," and all concerned in it have ample reason to be satisfied with their 1890 Exhibition.

NURSERYMEN'S CLASSES.

Class 1, seventy-two varieties, distinct, single trusses. This, the great class of the Show, awakened, as usual, a very large amount of interest. When the greatest growers in the kingdom are in competition the struggle is watched closely, and on the present occasion the meeting of several old rivals added to the interest of the contest. Five stands were staged, and a total of 360 fine blooms in one class made it one of considerable effect. Victory last year, it may be remembered, rested with Messrs. Harkness & Son of Bedale, these northern growers, favoured by the hot and early season, defeating their southern rivals somewhat decisively. This year the climatic advantages were reversed. Wet and cold weather in the north kept the flowers back to such an extent that last year's winners found that they had to rely upon cut-back plants for their show flowers, the maidens not being ready, and the lack of weight, size, and substance in their stand was consequently very noticeable. The result was, as might have been anticipated, that the southern and western growers were enabled to avenge their defeat of last season most effectively, and the struggle for the valuable challenge trophy resolved itself into a remarkably close fight between Mr. Frank Cant, Braiswick, Colchester, and the English Fruit and Rose Company (Cranston's), King's Acre, Hereford, terminating eventually in a victory for Mr. Cant. He staged the following varieties, their names being given in the order in which they were placed, reading from left to right—Back row: Dupuy Jamain, La France, a beautiful flower; Etienne Levet, Her Majesty, Annie Wood, Lady Mary Fitzwilliam, Chas. Lefebvre, Pride of Waltham, A. K. Williams, lacking colour; Madame Isaac Péreire, Madame Henri Péreire, very fine indeed; Comtesse d'Oxford, Maurice Bernardin, Baronne de Rothschild, Général Jacqueminot, Marie Finger, Ella Gordon, Madame Bois, Star of Waltham, Sir Rowland Hill, Camille Bernardin, Prince Camille de Rohan, Ulrich Brunner, very fine; and Horace Vernet. Middle row: Countess of Rosebery, Victor Hugo, Catherine Mermet, Louis Van Houtte, Madame de Watteville, Earl Dufferin, Marie Verdier, Pride of Reigate, Madame Gabriel Luizet, Alfred Colomb, Heinrich Schultheis, Grand Mogul, Merveille de Lyon, a splendid bloom; Madame Norman Néruda, Mrs. John Laing, a grand flower; Crown Prince, Mons. E. Dupuy, Duke of Teck, Maréchal Niel, Marie Pernet, Madame Eugène Verdier, Dr. Andry, very fine; Captain Christy, and Sultan of Zanzibar. Front row: Prince Arthur, François Michelin, Mrs. Baker, Marie Van Houtte, Comtesse de Ludre, an exquisite flower, which attracted much attention, lustrous carmine red; Duchesse de Morny, Earl of Pembroke, Madame Lambard, beautiful; Duke of Edinburgh, Marquise de Castellane, Duke of Connaught, John Hopper, very fine; Duchess of Bedford, The Bride, a lovely example; Mrs. George Paul, Innocente Pirola, Lady Helen Stewart, Niphetos, Mons. E. Y. Teas, François Louvat, Marie Baumann, Mons. M. Baron, Chas. Lamb, and Chas. Darwin. Mr. Cant must be congratulated on the very high condition of his flowers. They were finely developed, richly coloured, smooth, bright, and pleasing in every point. Moreover, they were well finished and skilfully set up, forming, perhaps, one of the strongest stands he has ever exhibited in this great class. The English Fruit and Rose Co. were not disgraced in going down before so superb a collection as that of Mr. Frank Cant. They had a grand lot of flowers, large and very rich in colour, the following being splendid examples—Général Jacqueminot, a bloom of great merit; Ulrich Brunner, Madame Chas. Wood, Madame Gabriel Luizet, a good example of Pride of Reigate, A. K. Williams, Constantin Fretiakoff, and Madame Bravy. Mr. B. R. Cant, Colchester, also had a very fine lot of flowers, a beautiful Thos. Mills, a grand Ulrich Brunner, a splendid Mrs. Baker, and noteworthy examples of La France, A. K. Williams, Eclair, and Victor Hugo being amongst the best flowers. He was placed third. Last year's winners, Messrs. Harkness and Co., had somewhat small flowers, but they were superbly finished, and in this respect were unexcelled. Both the premier Tea and the premier Hybrid Perpetual, which are referred to later on, were found in this stand, and the fourth prize was awarded to it. It may be noted that Messrs. Harkness & Son were the only exhibitors present from the north, the weather having, presumably, been too much for other well-known growers.

Class 2, forty-eight, distinct, three trusses of each. Another important class, and with the competitors numbering four, the many cases of blooms made a brave show. Mr. B. R. Cant, Colchester, was placed first for a very fine collection of flowers, large, well coloured, and

with hardly an exception perfectly fresh. The varieties represented were as follows:—Back row: Etienne Levet, Eclair, Merveille de Lyon, very chaste; Prince Camille de Rohan, Madame Isaac Péreire, Duke of Edinburgh, Pride of Waltham, Le Havre, tarnished; Madame Gabriel Luizet, Fisher Holmes, Niphetos, Comtesse d'Oxford, La France, very fine; Duchesse de Morny, Innocente Pirola, beautiful examples; Ulrich Brunner, Her Majesty, Sénateur Vaisse, Souvenir d'un Ami, Chas. Lefebvre, Mrs. John Laing, Louis Van Houtte, Madame

ston's), Hereford. Very bright and clean were Mr. Frank Cant's third prize flowers, viewing them generally, and Messrs. Paul & Son, Cheshunt, who were fourth, also merit a word of praise.

Class 3, forty-eight, distinct, single varieties, produced one of the best displays in the Exhibition, nine being in competition. The Cotswold Roses came to the front unmistakably, Messrs. J. Jefferies & Sons of Cirencester staging a splendid stand. The flowers were most even in all points, being of fair size, fresh, and well coloured. The varieties are



FIG. 7.—REV. H. H. L'OMBRAIN.

Watteville, and Marie Baumann. Front row: Earl Dufferin, Madame Lambard, Camille Bernardin, Baronne de Rothschild, Victor Hugo, The Bride, Alfred Colomb, Madame C. Joigneaux, Sir Rowland Hill, Comtesse de Nadaillac, Prince Arthur, Heinrich Schultheis, Duke of Wellington, Catherine Mermet, A. K. Williams, very fine; Madame Cusin, Dupuy Jamain, Marie Verdier, Maurice Bernardin, Marie Finger, Beauty of Waltham, Souvenir d'Elise, a beautiful bloom but a little tarnished; Général Jacqueminot, and François Michelin. Fine examples of Marie Baumann, Mrs. John Laing, Alfred Colomb, Lady Sheffield, Ulrich Brunner, and Comtesse d'Oxford were conspicuously good in the second prize collection of the English Fruit and Rose Company (Cran-

enumerated:—Back row: Merveille de Lyon, flown; Mons. Gabriel Tournier, Mrs. John Laing, a perfect bloom; Duke of Teck, Lady Mary Fitzwilliam, Madame Isaac Péreire, Violette Bouyer, Ulrich Brunner, small, but very graceful and rich; Magna Charta, Viscountess Folkestone, Beauty of Waltham, Madame Montet, Horace Vernct, La France, Général Jacqueminot, and François Michelin. Middle row: Victor Verdier, Madame Hippolyte Jamain, Duke of Edinburgh, very fine; Maréchal Niel, Alfred Colomb, Innocente Pirola, Prince Arthur, very good; Heinrich Schultheis, Marie Baumann, Madame Gabriel Luizet, John Stuart Mill, Niphetos, Glory of Cheshunt, Pride of Waltham, and Dingee Conard. Front row:—Prince Camille de Rohan, Chas. Lamb,

Francisca Krüger, Louis Van Houtte, Madame Eugène Verdier, Comte de Raimbaud, Marie Verdier, A. K. Williams, Ferdinand de Lesseps, Catherine Mermet, Jean Cherpin, Marie Van Houtte, Comtesse d'Oxford, Rubens, Grand Mogul, and Captain Christy. Messrs. Curtis, Sanford and Co., Devon Nurseries, Torquay, had an excellent stand, comprising admirable examples of Heinrich Schultheis, Fisher Holmes, Comtesse d'Oxford, and Alfred Dumesnil, though the latter was a little spotted. They were placed second, and following them were Messrs. D. Prior and Son, Myland Nurseries, Colchester, charming examples of Madame Cusin, A. K. Williams, and Duchesse de Morny calling for notice in their stand. The remaining prize went to Messrs. G. & W. H. Burch, Peterborough.

Class 4, twenty-four, distinct, single trusses. Eight stands were here in competition, the best coming from Mr. G. Mount, Canterbury. He had in the back row Madame Gabriel Luizet, Marie Baumann, Merveille de Lyon, Dupuy Jamain, Comtesse d'Oxford, Duke of Edinburgh, Mrs. John Laing, and Alfred Colomb, very fine. Middle row: A. K. Williams, Mdlle. Eugène Verdier, Etienne Levet, Général Jacqueminot, Her Majesty, Chas. Lefebvre, Ulrich Brunner, and Louis Van Houtte. Front row: Prince Camille de Rohan, Souvenir d'Elise, Annie Wood, Maréchal Niel, Mons. E. Y. Teas, Prince Arthur, Niphetos, and Duke of Wellington. The best flowers in Messrs. G. Bunyard & Co.'s neat second prize collection were Dr. Andry and Madame Gabriel Luizet, others being larger, but a little rough. Mr. J. Mattock, New Headington, Oxford, was third, and Mr. S. G. Rumsey, Wrotham, Kent, fourth.

Class 5, twenty-four, distinct, three trusses of each, saw Messrs. Prior and Son improve on their previous position by taking first prize. They had the following varieties in good condition:—Back row: Général Jacqueminot, Merveille de Lyon, Prince Arthur (very good), Catherine Mermet, Madame Ducher, Duchesse de Morny, A. K. Williams, Pride of Waltham, Marie Baumann, Mrs. J. Laing, Ulrich Brunner, and Lady Mary Fitzwilliam. Front row: Viscountess Folkestone, Fisher Holmes, Madame de Watteville, Louis Van Houtte, Madame Lambard, Comtesse d'Oxford, Niphetos, Dupuy Jamain, The Bride, Duke of Wellington, Prince Camille de Rohan, and Marie Verdier. These were a beautifully finished stand. Next in point of merit, and pressing closely on the first prize winners, were Messrs. Keynes, Williams, & Co., of Salisbury. The third prize went to Messrs. G. & W. H. Burch, and the fourth to Messrs. J. Jefferies & Son; nine competing in all.

The best Hybrid Perpetual exhibited by a nurseryman was pronounced to be Mrs. John Laing in Messrs. Harkness & Sons' stand of seventy-two—a lovely bloom, perfect except for the tip of one petal being somewhat tarnished. The best Tea was found in the same stand—a delightful bloom of Catherine Mermet.

AMATEURS' CLASSES.

Class 6, forty-eight blooms, distinct varieties, the leading class for amateurs, brought six competitors, victory falling to Mr. E. B. Lindsell, Bearton, Hitchin, who has worked his way to the front very rapidly of recent years, but although he has before shown with success at the National, we believe this was his maiden attempt for the challenge trophy, and he may be justly proud of the result. His stand was one fitted to compare with many of the best of past years, and merits for him hearty congratulations. He showed the following varieties:—Back row: Mrs. J. Laing, a superb flower; Comte de Raimbaud, also a magnificent bloom; Madame Gabriel Luizet, Le Havre, a beautiful example; Heinrich Schultheis, Beauty of Waltham, Marie Verdier, grand flower; Ulrich Brunner, La France, Duke of Edinburgh, Her Majesty, A. K. Williams, Captain Christy, Charles Lefebvre, Marquise de Castellane, and Madame Victor Verdier. Middle row: Prince Arthur, François Michelin, Duke of Wellington, Merveille de Lyon, Horace Vernet, Lady Mary Fitzwilliam, Comtesse d'Oxford, brilliantly coloured; Viscountess Folkestone, Sénateur Vaisse, Baronne de Rothschild, Susanne Marie Rodocanachi, in superb condition; Pride of Waltham, Général Jacqueminot, Comtesse de Nadaillac, very beautiful; Victor Hugo, and a charming example of Countess of Rosebery. Front row: Marie Van Houtte, Xavier Olibo, Caroline Kuster, Alfred Colomb, Madame Cusin, La Rosière, Maréchal Niel, Auguste Rigotard, Marshall P. Wilder, Duchess of Bedford, Anna Ollivier, John Stuart Mill, Niphetos, Earl Dufferin, Catherine Mermet, and Duchesse de Morny. The perfection of condition in which these flowers were shown was astonishing considering the recent troublesome weather. They were exquisite. A well-known exhibitor in the person of the Rev. J. H. Pemberton, Havering-atte-Bower, Romford, was awarded second prize. He was many points in the rear, nevertheless had a highly praiseworthy display, showing Dr. Andry, Charles Lefebvre, Madame Gabriel Luizet, Niphetos, Prince Arthur, Ulrich Brunner, Comte de Raimbaud, and Auguste Rigotard particularly well. The Rev. A. Foster-Melliar, Sproughton Rectory, Ipswich, was third with Dr. Andry, Souvenir d'Elise, Duke of Wellington, Dupuy Jamain, and François Michelin as his best flowers, the remaining award going to Mr. A. Slaughter, Jarvis Villa, Steyning.

Class 7, sixteen distinct varieties, three trusses of each, also brought six competitors, and here Mr. Lindsell, who is evidently in his very best form, tied with the Rev. J. H. Pemberton. He showed in the back row La France, A. K. Williams, Viscountess Folkestone (the only weak trio in the stand), Comtesse d'Oxford, Louis Van Houtte, Merveille de Lyon, and Beauty of Waltham; in the front, Le Havre, Heinrich Schultheis, Duke of Wellington, Mrs. J. Laing, Madame Gabriel Luizet (very beautiful), Horace Vernet, Marie Verdier, and Marie Finger. Mr. Lindsell should have won but for the faulty Viscountess Folkestone. Mr. Pemberton had the following:—Back row: Heinrich Schultheis, Madame Victor Verdier, Victor Verdier, Ulrich Brunner, Marquise de Castellane,

A. K. Williams, Countess of Rosebery, and Comtesse d'Oxford. Front row: Exposition de Brie, Etienne Levet, Lady Mary Fitzwilliam, Duke of Wellington, Beauty of Waltham, Madame Gabriel Luizet, Charles Lefebvre, and Prince Arthur. The third prize went to an old winner of high honours at the National, Mr. R. N. G. Baker, Heavitree, Devon, and the fourth to the Rev. A. Foster-Melliar.

Class 8, thirty-six distinct, single trusses, produced four stands of fair merit, the best being that from Mr. Salter, gardener to T. B. Haywood, Esq., Woodhatch Lodge, Reigate. They were moderate in point of size, but, with one or two exceptions, good in other respects. The varieties were as follows:—Back row: Camille Bernardin, Baronne de Rothschild, A. K. Williams, Auguste Rigotard, La France, Beauty of Waltham, Comtesse d'Oxford, Her Majesty, Louis Van Houtte, François Michelin, Madame Gabriel Luizet, and Ulrich Brunner. Middle row: Etienne Levet, Duke of Teck, Heinrich Schultheis, Mrs. John Laing, Barthélemy Joubert, Countess of Rosebery, Merveille de Lyon, Chas. Lefebvre, Pride of Waltham, Marie Baumann, Dr. Andry, and Duke of Edinburgh. Front row: Eclair, Star of Waltham, Marie Rady, Sultan of Zanzibar, Marie Verdier, Horace Vernet, Alfred Colomb, Duchess of Bedford, Duchesse de Morny, Xavier Olibo, Madame Hippolyte Jamain, and Mons. E. Y. Teas. Smaller but neat blooms from Mr. Brown, gardener to Mrs. Waterlow, Great Doods, Reigate, followed, a very clear and brightly coloured bloom of François Michelin, a well-built example of La France, a large Earl Dufferin, and a beautiful Mdlle. M. Verdier being the features of this stand. The Rev. Hugh A. Berners, Harkstead Rectory, Ipswich, was third, and Mr. W. H. Jackson, Stagsden Vicarage, Bedford, fourth.

Class 9, twelve distinct, three trusses each. There were four competitors in this class, each showing well. First, Mr. Brown, extremely bright and rich, a little damaged. The varieties were as follows:—Back row: Her Majesty (very large), Charles Lefebvre, La France, Etienne Levet, Mrs. J. Laing, Ulrich Brunner, Alfred Colomb, Merveille de Lyon, Duke of Edinburgh, Madame G. Luizet, Marie Baumann, Louis Van Houtte. The second place was taken by T. B. Haywood, Esq., for an even collection, mostly crimson varieties. The Rev. H. A. Berners was third, and Mr. W. H. Jackson fourth.

Class 10, twenty-four distinct, single trusses. Of the four exhibitors the prize was secured by J. Gurney Fowler, Esq., Glebelands, Woodford, Essex, with a beautiful even stand of medium-sized blooms. Back row: Louis Van Houtte, Her Majesty, Etienne Levet, Star of Waltham, La France (large, but damaged), Ulrich Brunner, Madame Victor Verdier, Marshal P. Wilder. Middle row: Comtesse d'Oxford, Charles Lefebvre, Madame Gabriel Luizet, Henri Lédéchaux, Marie Baumann, Comte Raimbaud, Captain Christy, E. Y. Teas. Front row: Innocente Pirola, Mrs. J. Laing, La Duchesse de Morny, Madame Lambard, Duke of Wellington, Pride of Waltham, Countess of Rosebery, Souvenir d'Elise Vardon. Mr. R. E. West, Reigate, was a close second. Mr. E. M. Bethune was third, and Mr. G. Christy, Westerham, fourth.

Class 11, eight distinct, three trusses of each, Mr. R. E. West succeeded in winning the premier award with very large blooms of François Michelin and Annie Wood, and smaller examples of Baroness Rothschild, Alfred Colomb, Duke of Edinburgh, Marie Baumann, Marie Finger, and Le Havre. Mr. G. Christy was second, these being the only two exhibitors.

Class 12, eighteen distinct, single trusses. Six competitors entered, and the quality of the blooms was good throughout, but the premier (Mr. E. Mawley, Rosebank, Berkhamsted) had remarkably fresh blooms, including several unusually fine examples; one of Ulrich Brunner secured the silver medal as the best H.P. bloom in the amateurs' classes. The varieties were Dupuy Jamain, La France, Horace Vernet, Comtesse d'Oxford, Sénateur Vaisse, Prince Arthur, Marie Finger, Dr. Andry, Marquise de Castellane, Duke of Wellington, S. M. Rodocanachi, Charles Lefebvre, Heinrich Schultheis, A. K. Williams, Etienne Levet, Madame V. Verdier, Madame G. Luizet. Miss F. Baker second; Mr. H. Foster, Aylsford, third; and the Rev. L. Garnett fourth.

Class 13, twelve distinct, single trusses. A strong class of nine exhibitors. Mr. R. L. Knight, Bobbing Place, Sittingbourne, won the first place with fine blooms of Marie Finger, Etienne Levet, Sultan of Zanzibar, Ulrich Brunner, Général Jacqueminot, La France, Madame C. Crapelet, Marie Van Houtte, Alfred Colomb, Madame C. Verdier, A. K. Williams, Duke of Edinburgh, and Le Havre. Second, Rev. A. Cheales; third, Mr. F. T. Wollaston, Reigate; fourth, Mr. R. G. Tucker, Swanley, Kent.

Class 14, nine distinct, single trusses. Again the competition was keen, but of the eleven stands the best came from Mr. G. Moules, Hitchin, who had an even, fresh, and neat collection comprising François Michelin, Xavier Olibo, Ulrich Brunner, Camille Bernardin, Heinrich Schultheis, Duke of Wellington, Mrs. John Laing, Horace Vernet, and Marie Baumann; Mr. Ernest Wilkins, Lyndhurst, Sutton, Surrey, with large and handsome blooms, a little rough; and Mr. J. Bateman, Archway Road, followed.

Class 15, six distinct, single trusses. Mr. J. Rawlins, The Bank, Cirencester, was first amongst eleven competitors with beautiful fresh blooms of Ulrich Brunner, E. Y. Teas, La France, A. K. Williams (excellent), Dr. Andry, Madame Gabriel Luizet. Mr. C. E. Cuthell was second, having a good Madame G. Luizet. Miss E. B. Denton, Orchard Court, Stevenage, was third; and Miss Alice M. Lucas, Hitchin, fourth.

Class 16, six distinct, three trusses of each. Nine exhibitors showed in this class, Mr. Percy Burmand, Reigate, taking the lead for good examples of La France, A. K. Williams (good), Général Jacqueminot, Mrs. J. Laing, Madame Marie Verdier, and Alfred Colomb. Miss

F. Baker was second; the Rev. A. Cheales third; and Mr. J. Parker, Old Headington, Oxon, fourth.

EXTRA CLASSES.

These formed very interesting portions of the Show, as they included the metropolitan and suburban grown Roses. The distance allowed, however, eight and ten miles respectively, includes several good Rose districts in the south and south-west of London. Class 17, six distinct, single trusses (open only to amateurs who have never won a prize at an exhibition of the N.R.S.), M. Hodgson, Esq., Shirley Cottage, Croydon, took the first place amongst seven exhibitors, with small but neat blooms of Charles Lefebvre, Marquise de Castellane, Victor Hugo, Marie Baumann, Duke of Wellington, and Dupuy Jamain; second, Mr. J. Parker, Old Headington, having a fine Ulrich Brunner; third, Mr. W. C. Romaine, Old Windsor; fourth, Mr. Alfred Wallis, Farningham. Class 18 was for twelve distinct single trusses of Roses grown within ten miles of Charing Cross. Six competitors staged good blooms, the silver cup, which constituted the first prize, being accorded to Mr. C. J. Graham, Coombe Road, Croydon, for substantial blooms of Her Majesty, Charles Lefebvre, Madame de Watteville, Marie Baumann, Comtesse de Nadaillac, Général Jacqueminot, Baroness Rothschild, A. K. Williams, Innocente Pirola, Mrs. John Laing, and Xavier Olibo; second, Mr. J. Bateman; third, Mr. J. E. Coleby, Rosenheim, Worple Road, Wimbledon, capital blooms; fourth, Mr. Hodgson.

Class 19, for six distinct single trusses of Roses grown within eight miles of Charing Cross, only brought three exhibitors. Mr. H. White, 5, Woodside Cottages, Highgate, was first, showing Earl of Dufferin, Beauty of Waltham, Madame G. Luizet, Alfred Colomb, Ulrich Brunner, Camille Bernardin, very fresh and good. Mr. W. Northover, 20, Queen's Road, Wimbledon, was second, and Mr. W. B. Faulkner, Fairholme, Worple Road, Wimbledon, third. In class 21, for six single trusses of any H.P., Mr. E. M. Bethune, Denne Park, Horsham, was first for fine blooms of Marie Baumann. Mr. A. Slaughter, Steyning, was third with Marie Baumann, very fresh and good; and Mr. Dart, Heathfield Road, Croydon, fourth for Marguerite Brassac.

TEAS AND NOISETTES.

Considering the season and the weather, Teas have been shown in much better condition this year than could have been expected. At the Royal Horticultural Society's meeting in the previous week there was an excellent display, and again at the Crystal Palace they were well represented. Such delicate blooms, however, invariably show the effects of the weather, and a few blooms with ragged damaged petals greatly spoil the appearance of a stand, and convey a bad impression generally.

The nurserymen's classes came first, and in that for twenty-four distinct single trusses Mr. G. Prince, Oxford, was first with fine fresh blooms of the following in the back row:—Innocente Pirola, Maréchal Niel, Niphetos, Comtesse de Nadaillac, Souvenir de Paul Neyron, Catherine Mermet, Souvenir de S. A. Prince, Souvenir d'Elise Vardon. Middle row: Rubens, Anna Ollivier, Madame Cusin, M. Furtado, Princess of Wales, The Bride, Souvenir d'un Ami, Hon. Edith Gifford. Front row: Comtesse Panisse, Marie Van Houtte, Francisca Kruger, Madame de Watteville, Madame Margottin, Alba Rosea, Amazone, and Adam. Mr. B. R. Cant was second with rather rougher blooms, and Mr. Frank Cant third for smaller but fresh examples; these being the only exhibitors.

With eighteen distinct, single trusses, there were eight competitors, the premier award being secured by Messrs. Harkness & Sons, Bedale, having medium sized but clean fresh blooms of Catherine Mermet, Niphetos, Souvenir d'un Ami, Innocente Pirola, Marie Van Houtte, Jean Ducher. Middle row: Souvenir d'Elise Vardon, Madame Cusin, Madame Hoste, Jules Finger, Devoniensis, Princess of Wales. Front row: Comtesse de Nadaillac, The Bride, Etoile de Lyon, Caroline Kuster, Anna Ollivier, Souvenir de Paul Neyron. Mr. J. Mattock, New Headington, Oxford, followed closely, a brightly coloured Souvenir de Thérèse Levet being noticeable; Messrs. J. Burrell & Co., Cambridge, were third; and Messrs. Paul & Son fourth.

Amongst seven competitors the best twelve single trusses of any Tea or Noisette, excluding Maréchal Niel, were exhibited by Mr. G. Prince, beautifully fresh bright clean blooms of Comtesse de Nadaillac. Mr. B. R. Cant was a close second with Madame de Watteville, very bright and good; Mr. J. Mattock was third for Souvenir d'un Ami; and Mr. Frank Cant fourth for Madame de Watteville.

In the class for eighteen distinct, three trusses of each, five competitors made a capital display, Mr. G. Prince leading with Souvenir d'Elise Vardon, Jean Ducher, Souvenir d'un Ami, Hon. Edith Gifford, Souvenir de S. A. Prince, Catherine Mermet, Comtesse de Nadaillac, Marie Van Houtte, Innocente Pirola, Francisca Kruger, Madame Cusin, Alba Rosea, Princess of Wales, Rubens, The Bride, Princess Beatrice, Adam, Souvenir de Paul Neyron. Mr. B. R. Cant was second, Mr. F. Cant third, and Mr. J. Mattock fourth.

The amateur classes, with the exception of class 30, were all for distinct single trusses, and the competition was fairly good in the majority.

The challenge trophy in class 26, for eighteen blooms, was won by the Rev. F. R. Burnside, Birch Vicarage, Hereford, who had excellent even blooms of—Back row: Madame Lambard, Souvenir d'Elise Vardon, Souvenir d'un Ami, The Bride, Catherine Mermet, Innocente Pirola. Middle row: Francisca Kruger, Comtesse de Nadaillac, Madame Bravy, Madame Cusin, Marie Van Houtte, Anna Ollivier. Front row: Comtesse Panisse, Rubens, Caroline Kuster, Hon. Edith Gifford, Ethel Brownlow

and Madame Hoste. Four other competitors staged good blooms, and the Rev. H. Berners, Harkstead Rectory, Ipswich, followed in the second place. The Rev. Page Roberts, Scole Rectory, Norfolk, was a good third, and the Rev. A. Foster-Melliar, Sprooughton Rectory, Ipswich, was fourth.

For twelve blooms Mr. O. G. Orpen, Hillside, West Bergholt, Colchester, was first, showing Catherine Mermet, Maréchal Niel, Rubens, Comtesse de Nadaillac, Madame de Watteville, Marie Van Houtte, Souvenir d'un Ami, Caroline Kuster, Princess Beatrice, The Bride, and Madame Cusin. The second prize went to Mr. J. Brown, gardener to Mrs. Waterlow, Great Doods, Reigate, for small but fresh blooms. Mr. G. M. Bethune, Denne Park, Horsham, was third, and Mr. W. H. Jackson, Stagsden Vicarage, Bedford, fourth. (Five exhibitors). Miss Francis Baker, Holmfels, Reigate (gardener, Mr. Bridgen) had the best nine blooms, small examples of Maréchal Niel, Madame Camille, Hon. Edith Gifford, Souvenir d'un Ami, Souvenir de S. A. Prince, Francisca Kruger, Souvenir d'Elise Vardon, Caroline Kuster, Marie Van Houtte. Second, Mr. Alfred Evans, Marston; third, Rev. L. Garnett, Christleton Rectory, Chester. (Three exhibitors).

No less than fifteen competitors entered class 29, for six blooms, and Mr. E. Mawley had the satisfaction of taking the first prize for Comtesse de Nadaillac, Souvenir d'un Ami, Anna Ollivier, Innocente Pirola, Jean Ducher, and Madame Bravy, all fresh and creditable blooms. Second, Mr. C. E. Cuthell, Boxhill, Dorking. Third, Rev. F. G. Taylor, Littleton Vicarage, Evesham. Fourth, Lieut.-Col. F. Standish Hore, Rosehill, St. Asaph. In the twelve variety class (three blooms of each), the Rev. H. A. Berners led with a capital stand, small, but bright and clean, of Madame de Watteville, Innocente Pirola, Catherine Mermet, The Bride, Francisca Kruger, Hon. Edith Gifford, Comtesse de Nadaillac, Etoile de Lyon, Madame Lambard, Marie Van Houtte, Souvenir d'un Ami, Anna Ollivier. The Rev. F. R. Burnside was second, Mr. W. H. Jackson third, and S. P. Budd, Esq., Bath, fourth. (Six exhibitors).

Class 31 was for nine single trusses of Catherine Mermet, and in the leading stand from the Rev. F. R. Burnside was found the premier Tea in the amateurs' classes, a superb flower amongst many that were also very fine. (Seven exhibitors). For six single trusses of any Tea or Noisette the Rev. Alan Cheales was first with Maréchal Niel in good form, the Rev. Foster-Melliar second with Marie Van Houtte, the Rev. R. Burnside third for Anna Ollivier, and Mr. Bethune fourth with Francisca Kruger.

OPEN CLASSES.

The greater part of the centre transept was devoted to the eighteen classes included under this head, and they constituted an exhibition in themselves. We, however, are compelled to summarise these as briefly as possible.

For twelve trusses of any yellow Rose except Maréchal Niel, Mr. G. Prince was first with Comtesse de Nadaillac, extremely fine; second Mr. B. R. Cant for the same; and third, Mr. F. Cant, with Francisca Kruger. Five exhibitors. In the white Rose class Mr. J. Mattock was first with beautiful blooms of Rubens. Second, the English Fruit and Rose Co. for Merveille de Lyon. Equal third, Mr. B. R. Cant with Merveille de Lyon, and Keynes, Williams & Co. with the same variety; thirteen exhibiting. For crimson Roses Mr. B. R. Cant was first with Alfred Colomb; Mr. S. P. Budd second with the same; and Mr. F. Cant third for Général Jacqueminot. Eleven exhibitors. In the dark velvety crimson class Mr. B. R. Cant led with Prince Arthur; Mr. F. Cant second for Victor Hugo very good; and Messrs. Curtis, Sanford and Co. third with Prince Camille de Rohan. Six exhibitors.

Marie Baumann was shown by eight exhibitors, Messrs. G. Bunyard and Co., R. B. Cant, and F. Cant being the prizewinners in that order. In the A. K. Williams class Messrs. B. R. Cant, G. Prince, and the English Fruit and Rose Co. were the successful exhibitors; while the best stands of Lady Mary Fitzwilliam came from Messrs. D. Prior and Son, F. Cant, and H. Norton, Louth. Niphetos was shown by Messrs. B. R. Cant, Keynes, Williams & Co., and Frank Cant, who were first, second, and third respectively. Two beautiful stands of Her Majesty came from Messrs. G. Paul & Son, who had very handsome blooms; and from Mr. F. Cant, the blooms a little smaller, with outer petals damaged. Mr. G. Prince was accorded a second prize for Princess of Wales (Tea).

Sixteen entered in the class for any H.P. not named in the preceding classes. Mr. F. Cant was first with Mrs. John Laing, very handsome substantial blooms. Messrs. G. Bunyard & Co. were second for Ulrich Brunner, and the English Rose and Fruit Company third with La France of medium size.

NEW ROSES.

For twelve single trusses of any new Rose, Mr. G. Prince was first with Souvenir de S. A. Prince, very even and beautiful blooms. Messrs. Curtis, Sanford, & Co. were second for The Queen, and Messrs. Paul and Son third with Dowager Duchess of Marlborough. With twelve new Roses Messrs. Paul & Son were the leading exhibitors, showing Comtesse B. de Blacas, H.P., globular, pink; Ernest Metz, Tea, a soft blush fine bloom; G. Caillot, a pale pink H.P., delicate and pretty; Sir Rowland Hill, H.P., deep purplish crimson; M. Trievoz, H.P., rosy crimson; John D. Pawle, H.P., dark crimson; Mrs. James Wilson, Tea, pale sulphur; Marchioness of Lorne, H.P., very bright crimson; Lady A. Hill, H.P., peculiarly bright pink; Souvenir de S. A. Prince, Edouard Michael, and Lady Alice. Mr. B. R. Cant and Messrs. Curtis, Sanford & Co. were second and third.

In the next class for three trusses of any new Rose, either not in

commerce or not first distributed earlier than November, 1889, a ground plant of the variety to be shown, two very fine Roses were exhibited, and two gold medals were awarded, a most unusual occurrence. The varieties so honoured were the following:—

Salamander (W. Paul & Son).—A seedling Hybrid Perpetual, remarkable for the redness of its colour, an extremely deep yet bright crimson; something of the style of Charles Lefebvre in build and petals, the latter broad, recurving, of great substance. Evidently a grand exhibition flower. A handsome symmetrical bloom. The foliage and habit are strong, and it is said to be very constant in its characters.

Mrs. Paul (Paul & Son, Cheshunt).—A charming Bourbon Rose, the bloom of exquisite shape and build, the petals broad, imbricated, and recurving. A delicate pink, shading to white in the centre of the older petals. The soft colouring renders this a delightful contrast to the darker Roses.

GARDEN ROSES.

An admirable feature was afforded by these, and if our report had not already extended to so great a length we should have referred to them fully, but we can only note that they were exhibited in first-rate condition, and attracted a large share of attention from the visitors. For thirty-six bunches Messrs. Paul & Son were first, showing Moss Roses *Félicité Perpetué*, *Gloire de Dijon*, *Perle d'Or*, *Thoresbyana*, *White Pet*, *Rosa Mundi*, &c.; second, Messrs. G. Bunyard & Co., who had fine blooms of *Madame Plantier*; third, the English Fruit and Rose Co. (Cranston's). Mr. C. E. Cuthell was first for eighteen varieties, showing, amongst others *polyantha*, *rugosa*, *lucida*, *Ma Capucine*, *Austrian Yellow*, *macrantha*, *Hebe's Lip*, *York* and *Lancaster*, W. A. Richardson, and others; second, Rev. J. H. Pemberton, an interesting collection; third, Mr. G. Mallender. Button-hole Roses were a charming class. Mr. J. Mattock led with an admirable collection, comprising *Rubens*, W. A. Richardson, *Amazon*, *Madame Lambard*, *Ma Capucine*, *Innocente Pirola*, *Madame de Watteville*, *Marie Van Houtte*, *Anna Ollivier*. Messrs. G. Bunyard & Co., *Maidstone*, were second with very neat buds of *Homère*, *Madame Falcot*, *Souvenir de Paul Neyron*, *Madame Cusin*, *Hon. Edith Gifford*, and *Bouquet d'Or*. Third, Mr. H. Evans.

Miscellaneous exhibits were numerous, and conspicuous amongst them was a grand collection of Roses from Messrs. W. Paul & Son, Waltham Cross, who had forty baskets and twenty boxes of cut flowers, representing a large number of varieties, including the many novelties sent out by this firm. Messrs. J. Veitch & Sons, Chelsea, had ten boxes of handsome Rose blooms; Messrs. Laing & Sons, Forest Hill, had a beautiful group of Tuberous Begonia flowers, Ferns, and Asparagus; Messrs. Cannell & Sons, Swanley, showed a group of Gloxinias tastefully arranged with Ferns and Asparagus; Messrs. Cheal & Son, Crawley, showed Roses and hardy flowers; Mr. W. Tayler, Hampton, had a box of Roses; Messrs. Ryder & Son, Sale, had a new Pink, *Souvenir de Sale*, of a peculiar mauve tint; Messrs. J. Peed & Son, Mitcham Road, had a collection of Roses; Mr. C. Turner a collection of Strawberries; Mr. H. J. Jones had a collection of Tuberous Begonias, yellow Carnations, and Tomatoes; and Mr. H. Bennett, Shepperton, sent a new H.P. Rose named *Capt. Haywood*, somewhat in the style of Ulrich Brunner, but of an extremely bright red tint.

HEREFORD AND WEST OF ENGLAND.

THE twenty-fourth Exhibition of this, the continuously oldest Rose show in the kingdom, was held in the Shire Hall, Hereford, on Tuesday, July 1st, when, we regret to say, that as in the case of last year, unfavourable weather considerably marred its usual success. Not only did heavy showers in the morning interfere with the cutting of local exhibitors and lessen the attendance, but adverse weather for several days must have disheartened intended exhibitors from a distance and prevented them keeping up to their engagements. Then, too, the cloudy, intermittently hot and cold weather of the past fortnight has checked growth, as evidenced by the prevalence of mildew, and made the date of exhibition, which looked so exactly promising, at least a week too early—add to all these disturbing elements Colchester fixture taking place on the same day, and the wonder ceases that the Rose magnates of Colchester, Salisbury, and Slough, of Devonshire and Hertfordshire, so faithful generally to old Hereford, were on this occasion conspicuous by their absence. Mr. Harkness—a host certainly in himself—with Messrs. Jefferies and Dickson, were the only exhibitors present. Your reporter could not resist heaving a deep sigh over past triumphs, when some half-dozen seventy-tuos would be staged by the premier Rose nurserymen to try conclusions with the famous King's Acre nurseries; and Baker and Jowitt among amateurs, could and did show the public how a Rose was to be grown and shown to perfection. *Tempora mutantur*, indeed! though we will not allow the truth in our case of the remaining part of the hexameter; a true rosarian never changes, at least for the worst; and we of Hereford, who do not at all intend to live on our past reputation, are already looking forward to welcoming the N.R. Society on July 8th next year, and, through our energetic Hon. Sec., Rev. F. R. Burnside, of whom we are very proud, of proving to demonstration that, in spite of occasional failures, there is life in the old Show yet.

Scant as were the exhibitors, and many and bare the gaps in the hall, still the quality of some of the boxes throughout was excellent. We seldom remember to have seen a grander seventy-tuos than that staged by the English Fruit and Rose Company (too delightfully vague an improvement on "Cranston & Co."). These consisted of large, smooth, bright blooms, with no suspicion of a weak corner. The darks were especially fine in colour. There was a scarcity of Teas to give brightness, which perhaps

was the only adverse criticism that could be passed. As may be supposed this admirable collection lost nothing by being set up by Mr. Grant, the quondam successful amateur and New Company's manager.

Subjoined is a list of names we hope will not be crowded out of our Journal this specially busy week, as comparatively with other unique lists we hold this to be far the best method of instructing the public. Seventy-two varieties, single trusses, division A, nurserymen.—First prize £8, English Fruit and Rose Company, Hereford, H. P. Ulrich Brunner, grand; Marie Baumann, Madame Hippolyte Jamain, A. K. Williams, Pride of Waltham, Auguste Rigotard, François Michelin, Thomas Mills, splendid; Merveille de Lyon, Abel Carrière, superb dark; Capt. Christy, Reynolds Hole, superb dark; La France, Lady H. Stewart, fine new; Charles Lefebvre, Maréchal Niel; Beauty of Waltham, Général Castellane, Duke of Wellington, Marie Verdier, Madame C. Wood, Gabriel Luizet, Maurice Bernardin, Heinrich Schultheis, grand; Baron Bonstettin, superb dark; Madame S. Rodocanachi, a perfect bloom, but puzzling to grow like its name; Prince Arthur, Anna de Diesbach, Alfred Colomb, splendid; Marguerite de St. Amand, Tea; Rubens, Sultan of Zanzibar, fine dark; Mrs. Baker, Pride of Reigate, a toy Rose among grown ups; Xavier Olibo, Marie Cointet, pretty; Lefebvre, fine Tea; Anna Ollivier, Dr. Andre, Tea; Devoniensis, H.P.; Duke of Teck, Duchesse de Morny, fine; Countess of Oxford, Tea; Niphetos, H.P.; Louis Van Houtte, Baronne Rothschild, Mons. Benoit Comte, good new; Magna Charta, grand; E. Y. Teas, Mdlle. Eugénie Verdier, Madame Desir; Mrs. Caroline S. Waites, new; Dupuy Jamain, Victor Verdier, J. S. Mills, Alphonse Soupert, dark, fine; Général Jacqueminot, perfect; Madame Eugénie Verdier, Comte Raimbaud, Mrs. John Laing, a fine acquisition; Victor Hugo, Duchess of Vallombrosa, Duke of Edinburgh, Tea; Madame Willermoz, H.P.; Rosieriste Jacobs, Princess Mary of Cambridge, Marie Rady, grand Tea; Souvenir d'un Ami, H.P.; Etienne Levat, Hybrid Tea; Grace Darling, us-ful; François Louvat. Second, £6, Messrs. Harkness and Sons, Bedale, Yorkshire.—This collection contained many excellent Tea Roses, notably a splendid bloom of Innocente Pirola, also The Bride and Marie Van Houtte, and Rubens, Souvenir d'Elise, and Etoile de Lyon were especially noticeable.

Division B, nurserymen, thirty-six varieties, single trusses.—First, £3, Messrs. J. Jefferies & Son, Cirencester. Second, £2, Messrs. Dickson (Limited), Chester. Third, £1, Mr. C. Whiting, Hereford. Twelve varieties, trebles, were carried off by the same exhibitors in the same order.

Division C, amateurs, thirty-six varieties, singles.—First, Mr. S. P. Budd, Bath, with H.P. Ulrich Brunner, François Michelin, very fine; Mrs. John Laing, Hippolyte Jamain, Marie Baumann, Marie Finger, Madame Prosper Laugier, Heinrich Schultheis, grand; Etienne Levat, Merveille de Lyon, Charles Lefebvre, Mdlle. Eugénie Verdier, Queen of Queens, Prince Arthur, Tea; Devoniensis, Victor Hugo, General Castellane, fine; Marie Cointet, E. Y. Teas, Her Majesty, large and good; Charles Darwin, Princess B-atrice, Le Havre, Marie Verdier, Sir Rowland Hill, new and useful; Captain Christy, Countess of Oxford, fine; Louis Van Houtte, Tea Catherine Mermet, Jean Soupert, Souvenir d'Elise, splendid; Madame Clemence Joigneux, Gabriel Luizet, smooth; Duchess of Beaufort, Madame Eugénie Verdier, Reynolds Hole. Second, Miss Bulmer. Third not awarded. Twenty-four varieties, singles.—First, R v. F. R. Burnside.

Division D, Herefordshire amateurs, twenty-four varieties, singles.—First, £2, with silver medal (N.R.S.), J. H. Arkwright. Second, £1, J. Rankin, M.P. Third, 15s, Rev. A. Phillips.

Tea and Noisette division, nurserymen, eighteen Teas and Noisettes.—First, £2, The English Fruit and Rose Company. Second and third not awarded. Twelve Teas and Noisettes.—First, 15s., Messrs. J. Jefferies and Son. Second, 12s., not awarded. Third, Mr. C. Whiting. Twelve Teas, trebles.—First, £2, Messrs. J. Jefferies & Son. Second, The English Fruit and Rose Co. Third, 15s, not awarded.

Amateurs.—Eighteen Teas or Noisettes.—First, £2, Rev. F. R. Burnside; second, Mr. S. P. Budd; third, 15s., not awarded. Twelve Teas or Noisettes.—First, 15s., Mr. C. Williams; second and third not awarded. Twelve Teas or Noisettes, trebles.—First, £2, Mr. S. P. Budd; second, £1, Rev. F. R. Burnside; third, 15s., Mr. C. Williams.

Open classes.—Twelve singles, any dark H.P.—First, 15s., the English Fruit and Rose Co., with fine level blooms of Ulrich Brunner, and also for light H.P. with grand blooms of La France. Twelve single trusses any yellow Rose.—Mr. J. H. Arkwright, first with pretty neat blooms of Bouquet d'Or. Mr. Budd took the N.R.S.'s silver-gilt medal for the best H.P. in the Show with François Michelin, and R v. F. R. Burnside a similar medal for the best Tea or Noisette with The Bride. The drawing-room and dinner decorations and other works of floral art were not competed for as numerous as usual, possibly from the prize list being this year considerably lessened. Rev. C. H. Bulmer and Rev. F. R. Burnside were the Judges in the nurserymen's classes, and Messrs. Grant and Harkness in the amateurs'.—THE HEREFORDSHIRE INCUMBENT.

COLCHESTER.—JULY 1ST.

It certainly was high time that Colchester had an exhibition of its own. Its Roses have been well to the front in every show in England for some years, and the three Colchester professionals were first, second, and third for seventy-two at the late show at York. The nurseryman's champion trophy may possibly have changed hands before these lines are printed, and it would certainly feel at home if once more lodged in the metropolis of Roses. A good deal of trouble has been undertaken by the officials in once more reinstating the Society, and it is hoped they may be successful in establishing the Show as a regular annual fixture.

The tents were pitched in the grounds of the Holly Trees, by kind permission of J. Round, Esq., M.P., and the weather was fine, but the day before had been terrible. Half a gale of wind with driving rain, sometimes quite heavy, all day was a sad trial to those who were anxious to cut good Roses. Cones and protections were blown clean away, and it was impossible that really good blooms could be exhibited on the following morning. The weather has been very unsuitable for Tea Roses, little of hot clear sun, and constant dribbles of rain having been the portion of East Anglia for a fortnight or more.

Nobody from a distance ventured in the only open class, and for thirty-six Roses the three Colchester Rose growers held the same position which they did at York—First, Mr. B. R. Cant; second, Mr. Frank Cant; third, Messrs. Prior & Son. There were, as might be expected, no extra good Roses to be noted either in this class or throughout the Show. There were only three exhibitors in the amateurs' principal class for twenty-four, and they were placed:—First, Rev. A. Foster-Melliar, Sproughton Rectory, Ipswich, and equal second Rev. H. T. Frere of Burston Rectory, Diss, and Rev. H. A. Berners, Harkstead Rectory, Ipswich. A small but fairly good A. K. Williams in Mr. Frere's stand had the silver medal as the best amateur H.P. For twelve Roses Rev. F. Page Roberts of Scole was first, Rev. A. T. Farquharson of Gissing Rectory, Diss, second, and Mrs. Egerton Green of Knutsford third. For twelve Teas there were five pretty good stands shown, which considering the weather shows how popular this class of Roses is becoming, in East Anglia at all events. Mr. Berners was first with a good stand, getting also a silver medal for a fine Anna Ollivier as the best Tea. Mr. Roberts was second with neat but smaller blooms, among which was a good Madame Cusin. Mr. Frere was third. For six single trusses of any H.P., Mr. Foster-Melliar was first with good Marie Verdier, Mrs. Egerton Green second, and Mr. Berners third with Gabriel Luizet, which variety as usual was shown by two or three other exhibitors. For six blooms of any Tea Mr. Foster-Melliar was again well ahead with Marie Van Houtte, Mr. Orpen of West Bergholt second, and Mr. Arthur Cant third. Mr. Orpen had a silver medal for the best box of amateur Roses grown within ten miles of Colchester, but the local classes did not fill as well as they should do in such a neighbourhood.

In herbaceous flowers Messrs. Burrell of Cambridge and Saltmarsh of Chelmsford showed well in the open class, the former leading, but not by much. In the amateur class Mr. Page Roberts had not much difficulty in winning the first prize. Dinner tables, buttonhole bouquets, &c., were fairly good, but might have been better, and probably will be another year. The number of visitors was not large, but then the sight of grand and good Roses can be nothing new to the good folk of Colchester.

BRACKHAM.

THE Brackham Rose Association was started twenty-five years ago as a "Rose" Society, and as such it has continued, although some of its daughters have combined with Roses the exhibition of other things, horticultural and vegetarian. The result was manifest in the excellent Show (one of the best the Association has held) at Bury Hill, near Dorking, on Wednesday, July 2nd, by invitation of Robert Barclay, Esq.

Considering what the weather had been previously, and especially the drenching rain, the flowers were remarkable. They must have been preserved by a whole forest of umbrellas to bring them up to the mark as the Judges viewed them when they went round on their judicial errand. On seeing a garden near Farnham, where the Roses were thus being preserved against the Show day, a friend observed to me that she thought I had a "garden party" in an obscure corner of the kitchen garden. Another friend thought when collecting the umbrellas and parasols that I was going in for the "old clothes" line. But what did it matter? The umbrellas answered the purpose. The challenge cup was won! You can do much with old umbrellas! Rose growers and Rose show-ers live long. Witness the fact in the present Hon. Sec. of this Association. The Rev. A. Cheales is what he was when I knew him twenty-five years ago; just as enthusiastic; just as keen. He scents the battle from afar as much as he did when he showed his first box in the school-room at Brackham. He is a trifle grey ("anno Domini," as my friend J. D. Pawle, a fellow Judge, feelingly remarked, "is bound to tell as time rolls on"), but his Roses are pre-eminent, and he wins more prizes than ever.

The Committee publish each year a fascinating schedule. It is worth joining the Association to secure one (I notice, though, that there are only sixty-two members, and there might be seventy). Past successes are recorded in it; Lord Penzance tells how to get a new race of Roses; the Rev. W. Wilks' remarkable summary in the Royal Horticultural Society's Report of the Rose Conference is still more summarised. Mr. Girdlestone points out the beauties of the single Roses that he grows in his delightful garden at Sunningdale. Rosa laxa is declared by Otto Froeber to be the coming Rose stock for the future, and Mr. G. Paul teaches in masterly fashion the young idea how to exhibit and win. Surely no one asks more of a schedule than this. Where could a Rose show be more fittingly or happily held than at Bury Hill, the home of so many rare plants, of the most delightful scenery, where the Deodaras grown from the first cone that came to England are now standing in full beauty (planted in 1832), where there is the finest Pinus insignis (1840) anywhere to be seen, where Abies Morinda (Smithiana) is in its glory, where Sikkim (Himalayan) Rhododendrons are plentiful, where A. Douglassi is magnificent and the "Taxodium," Cryptomeria Lobbi, and the "Oak Cork Tree" protected from the grasping tourist who is allowed often to visit Bury Hill, and who showed his

gratitude for the privilege by carrying off the bark bit by bit, are quite at home. The estate is extensive, 3000 acres. The wealth of American plants, Rhododendrons, Azaleas, &c., is stupendous, and planted as they are everywhere, with a background of the finest Coniferae, must in the early summer be a sight ever to be remembered. A very large sheet of water in front of the house adds to the beauty of the place, and the courtesy and hospitality of the owner complete the satisfaction of all who have in any way to do with the show. The beautiful band of the Buffs played near the house, the Rose tent being some distance further removed. The Committee and the Judges (Mr. G. Paul, Mr. J. D. Pawle, and the writer of these notes) were hospitably entertained at luncheon by Mr. Barclay, and short speeches were made in response to the health of the Judges by the "President of the commission," Mr. G. Paul, and his two assessors.

It rained heavily for a while in the afternoon, but the Company, in spite of the weather, was very large. The Exhibition tent looked most attractive as you entered it, being profusely decorated with Caladiums, Ferns, Palms, Dracenas, &c., by Mr. Appleby of the Box Hill Nurseries. He also showed magnificent Rose blooms. Close by was Mr. G. Paul's box of new Roses from the "Old" Nurseries, Cheshunt, comprising blooms of Caroline d'Arden, Scipion Cochet, John D. Paule, an improved Général Jacqueminot, easily forced, hardy as iron, resists mildew, and a brilliant mixture of crimsons; Madame Trievoz, Comte H. Rignon, Hybrid Tea; N. L'Idéal, Paul's Cheshunt Scarlet, Dowager Duchess of Marlborough, exquisite scent, new this spring; Sir Rowland Hill, violet crimson H.P.; Comtesse de Blacas, Earl of Dufferin, and above all his new Bourbon Rose, Mrs. Paul, light peach with darker centre and paler edges, a seedling from Madame Isaac Périere, and of tremendous growth. Award of merit Floral Committee R.H.S., first-class certificate Royal Botanical Society, first-class certificate Aquarium Rose Show.

There was a very close contest in the twenty-fours, which formed the first class of division A, for which there were three competitors, all showing very excellent blooms. Rev. Alan Cheales won the National Rose Society's gold medal, which was the first prize, for the following fine blooms:—Silver Queen, Duke of Edinburgh, Emilie Hausburg, La France, Star of Waltham, Xavier Olibo, François Michelon, A. K. Williams, Alfred Colomb. Madame Berard, Her Majesty, Dr. Hogg, Earl Dufferin, Maréchal Niel, Reine Maria Pia, Sophie Fropot, Pride of Waltham, Le Havre, Leopold Premier, Souvenir d'Elise Vardon, Gabriel Luizet, Marie Rady, Niphotos, and Duchesse de Caylus. Mr. C. E. Cuthell took second prize (National Rose Society's silver medal) with a good box containing Madame Eugène Verdier, Alphonse Soupert, Belle Lyonnaise, F. de Lesseps, The Baroness, Etienne Levet, Charles Lefebvre, Ulrich Brunner, Souvenir d'Elise, Dupuy Jamain, Gabriel Luizet, A. K. Williams, La France, A. Colomb, Marie Van Houtte, Mrs. J. Laing, Prince Arthur, Maréchal Niel, Madame V. Verdier, Grace Darling, Louis Van Houtte, Violet Bouyer, and Xavier Olibo. Mr. Wollaston's box only missed second prize by two points, and looked the best box of the three. The Teas are always good at Brackham. Mr. Cuthell had first prize for his twelve: Maréchal Niel, Alba Rosea, Marie Van Houtte, Souvenir d'Elise, Jules Finger, Caroline Kuster, Madame Lambard, Anna Ollivier, Rubens, Catherine Mermét, Souvenir d'un Ami, Rêve d'Or. Next came Rev. A. Cheales with a good box, in which were fine blooms of Princess of Wales, Belle Lyonnaise, and Marquis Sanima.

For six triplets of any kind Mr. Frank Wollaston came out well with Duchesse de Vallombrosa, C. Lefebvre, Duke of Wellington, Gabriel Luizet, Duke of Edinburgh, M. de Castellane, and took first prize. Mr. Cuthell took second for Baronne de Rothschild, Marquise de Castellane, Charles Lefebvre, Merveille de Lyon, Xavier Olibo, and Gabriel Luizet. The twelve of any kind brought out nine competitors, and a new exhibitor in A. Tate, Esq., who is likely to prove himself hard to beat. He was *facile princeps*, and took N.R.S.'s good medal with a very fine box containing Marie Verdier, Etienne Levet, François Michelon, Ulrich Brunner, A. K. Williams, La France, Charles Lefebvre, Merveille de Lyon, Eugène Verdier, Xavier Olibo, Madame H. Jamain, and Louis Van Houtte. Mr. C. Horne took second prize for a very neat and good box, in which Abel Carrière, Marie Baumann, Mrs. G. Paul, and Madame Isaac Périere were conspicuous. Mrs. Perkins and the Hon. H. D. Ryder took an equal third prize.

Mr. Tate won first prize for nine Teas, in which there were good blooms of Etoile de Lyon, Madame Willermoz, Madame de Watteville, C. Mermet, and Comtesse de Nadaillac. Mr. Horne took the second prize. There were four other competitors. In the class for four triplets Mr. Horne came up again with Marie Baumann, Gabriel Luizet, La France, and Charles Lefebvre, and carried off first prize; while the Hon. H. D. Ryder, with the Duke of Edinburgh, La France, Souvenir de Malmaison, and Marquise de Castellane took the second. For six of any kind Mrs. Hatch won first prize for Princess Mary of Cambridge, Dr. Andry, Duchesse de Morny, Duke of Teck, La France, and The Baroness; a very good box. For four Teas Mrs. Hatch was again to the front with Maréchal Niel, Souvenir de Paul Neyron, The Bride, and Souvenir d'un Ami. In the class for two triplets there was only one box, and in it were Sultan of Zanzibar and Comtesse de Nadaillac. Mr. Horne won first prize in members' open classes for six of any one Tea with Madame Bravy, and Mr. Cheales the second with Maréchal Niel, while a third went to Mr. Cuthell for Marie Van Houtte. In the open classes for six of the same kind (not Tea) Hon. H. D. Ryder had first prize for six fine La France; Lady Lawrence second for six almost equally fine Ulrich Brunner; and Mrs. Leopold Seymour and Mr. F. Wollaston divided third prize for La France and Gabriel Luizet respectively.

A very interesting feature of the Show was the class for garden

Roses, which was much better than it was last year. Mr. Cuthell's collection of forty-eight varieties was admirable, comprising amongst others *Rugosa alba*, *De la Grifferaie*, *Lucida plena*, *Læda*, *Gloire de Polyantha*, *White Pet*, *Red Damask*, *Paul's Red Pet*, *Mignonette*, *W. A. Richardson*, *Coruscans*, *Austrian Yellow*, *Paquerette*, *Rosa Indica*, *Ma Capucine*, *Austrian Copper*, *Fairy Rose*, *Green Rose*, *L'Idéal*, *Persian Yellow*, *Grace Darling*, *Rêve d'Or*, *Crested Moss*. Miss Barclay took second prize. For a smaller collection Mr. Tate won first prize, and Mrs. L. Seymour second, and for a still smaller collection Mrs. Hatch carried off the prize.

The show of decorations was better than usual. The one for the dinner table that secured the first prize was arranged with great taste by Miss Nesfield, a new exhibitor. It consisted of a low centrepiece of green glasses in a frame of wrought iron, and four other green glasses, all filled with *Alstroemerias*, *Ferns*, and *Copper Beech*. Miss Fuller took the second prize for a graceful arrangement of yellow *Eschscholtzia*, *Spiræa*, *Clematis erecta*, *Ferns*, and *Grass*, while a tall basket arranged by Miss Bencke with white *Pæonies*, *Ferns*, *Shirley Poppies*, white *Foxglove*, and *Asparagus* was commended. There were six entries. There was a class for arrangements in large round blue vases of a uniform pattern. First prize went to Mrs. Cuthell for single *Macrantha Rose* and *Ferns*, most tasteful; and the second to Miss Fuller for *Niphetos*, *Asparagus*, and *Ferns*. For the buttonhole bouquets in groups of three there was a rather limited competition, and some required a microscope to appreciate them. Miss D. A. Nesfield took first prize, and Miss Tritton the second.

For the best Rose in the Show there was one solitary Rose, very one-sided, set up in an Eno's fruit salt bottle, reminding one of the "good old times." It did not win. But the Judges gave the prize to the Hon. H. D. Ryder for a very beautiful bloom of *Catherine Mermet*. The Society is to be congratulated for its excellent Show on the occasion of its "silver wedding." "Enthusiasm" is the motto on the banner of the Association. That it will never grow cold is certain while the management is in the excellent hands of the present Committee.

It only remains to be said that Mr. Gray is the gardener at Bury Hill, and a very comfortable home does he occupy in the kitchen garden, three-quarters of a mile from the house, and that the Judges are much indebted to him for his courtesy and kindness in showing them the many features of great interest attached to this beautiful place, which, with the help of eleven subordinates, he keeps in excellent order.—A. B. ALEXANDER, *Shedfield Vicarage*.

NORWICH.—JULY 3RD.

DRENCHING rain again; what a Rose season we are having! Norwich has often been unfortunate in the matter of weather; but a society which has a strong reserve fund, and not unfrequently takes over £100 gate money in a day, can at all events bear a reverse better than weaker associations.

The Show was held in the grounds of Bracondale Woods, kindly lent for the purpose by Russel J. Colman, Esq. As might be expected from the inclemency and coldness of the weather the number of exhibits was not large, and the Rose standard low, very few specimens calling for particular notice. In the open classes, Mr. B. R. Cant of Colchester was first for forty-eight, Messrs. Burch of Peterborough second, and Mr. F. Cant third, the quality throughout being but little above that seen in the amateurs' classes. For twelve trebles Mr. B. R. Cant was first, Miss Penrice of Whitton second, and Rev. A. Foster-Melliar, Sproughton Rectory, Ipswich, third. In the amateurs' class for thirty-six Roses the annual battle was keenly fought out between the old rivals at Norwich, Rev. H. T. Frere of Burston Rectory, Diss, and Rev. A. Foster-Melliar. The premier position was this year awarded to Mr. Frere, and he and his bevy of fair assistants were warmly congratulated on thus gaining the principal prize for Roses in East Anglia. Miss Penrice was third with a less worthy collection. In twenty-four Roses Mr. Foster-Melliar was first, having here a very good bloom of *Duchesse de Morny*. Rev. F. Page Roberts of Scole Rectory was second with a good stand, and Miss Penrice third. In twelves, Mr. Page Roberts was first, Mr. B. E. Fletcher second, Mr. T. C. Blofeld third, and Mr. W. Birkbeck fourth. In a twelve class, open only to Norfolk amateurs not employing a regular gardener, Rev. A. T. Farquharson was first, Mr. G. S. Culley second, Mr. E. N. Bunn third, and Mr. A. J. Learner fourth. This sort of class does not seem very well defined, by the way. Some of the strongest amateurs in the country employ no regular gardener, and the experienced exhibitor would always rather have a regular gardener against him than an amateur who attends to his Roses himself; and this is no disparagement of gardeners, but merely a recognition of the fact that the gardener has a hundred and one things to attend to, none of which may be neglected, while the enthusiastic amateur is a specialist, and throws everything on one side for his Roses.

In six Roses, Mrs. Ames Lyde was first, Mr. G. S. Culley second, and Mr. E. N. Bunn third. In the class for twelve Teas or Noisettes, Mr. Foster-Melliar was first, getting also the silver medal for *Souvenir d'Elise*; Mr. Page Roberts second, and Mr. Frere third. This was somewhat of a surprise. Rev. H. A. Berners' fine Teas were absent; but Mr. Foster-Melliar's were unnoticed at Colchester, where the other two were well placed, and the winner made no secret of the fact that no less than eight of his twelve Teas at Norwich, including the *Souvenir d'Elise*, were the identical blooms shown at Colchester. Truly Tea Rose showing, in such cold and wet weather, is a funny business.

For six H.P.'s of one sort, Rev. A. L. Fellowes of Bighton Rectory won with *La France*, very large and fine. One of these deservedly

gained the silver medal as the best H.P. It had opened more on one side than the other, but was perfect in itself, and as fine a bloom of the sort as is often seen. Mr. Foster-Melliar was second with *Gabriel Luizet*, and Miss Penrice third with *A. K. Williams*. For six Teas of a sort, Mr. Foster-Melliar was first with *Marie Van Houtte*, Mr. E. N. Bunn second with Hon. Edith Gifford, and Mr. Fellowes third with *Madame Bravy*. The weather cleared up in the afternoon, and the attendance was fair, £80 being taken at the gates.—W. R. RAILLEM.

CANTERBURY.

THE terrible day of wind and rain that was experienced all over the country on Monday gave one but little hope that the Roses at the old Cathedral city would be of their usual excellent character, and therefore one was very agreeably disappointed to find one's anticipations completely falsified by the event, for not only were the Roses numerous but excellent in colour and freshness. Some few, it is true, bore the signs of weariness, which might have been more generally looked for, but, on the whole, they were remarkably good, and taking it altogether it was the best Show I think the Society has held. The great improvement that has taken place in the local classes was most remarkable. No longer were there to be seen stands at which one could hardly help smiling; no longer were outrageous names put to flowers or duplicates to be found; and as I have watched the progress of this Society from its very birth, and have attended all its shows, I can write from experience of the past. The zealous exertions of its able Secretary, Mr. S. H. Dean, have tended to put the Society on a firmer basis, and all lovers of the Rose, especially those whose interests, like mine, are closely bound up with the dear old city, must rejoice at the continued prosperity of the Society.

In the class for eighteen (amateurs) the first prize was won by R. E. Knight, Esq., of Bobbing, near Sittingbourne, with admirable blooms of *La France*, *Eugène Verdier*, very fine; *Eugène Verdier*, *Princess of Wales*, *Duke of Edinburgh*, *Ulrich Brunner*, very fine in colour; *Etienne Levet*, *Maréchal Niel*, *Duke of Teck*, *The Bride*, *Reynolds Hole*, very fine bloom; *A. K. Williams*, *Duke of Wellington*, *Gabriel Luizet*, *Gloire Lyonnaise*, *Mrs. John Laing*, very fine; and *Louis Van Houtte*, very fine. The second prize went to Cooper Wachter, Esq., and the third to Mr. R. E. West, Reigate. In class 2, for the best twelve, Mr. Knight was again first with *Gabriel Luizet*, *Le Havre*, *La France*, *Charles Lefebvre*, *Etienne Levet*, *Baroness Rothschild*, *Captain Christy*, *Duke of Teck*, and *Général Jacqueminot*. Mr. H. Foster was second. In class 3, for twelve Teas and Noisettes, the first prize was won by the popular and most valued President of the Society, Captain Lambert, with a box containing beautiful blooms of *Alba Rosea*, *Catherine Mermet*, *Madame de Watteville*, *Souvenir d'un Ami*, *Madame Van Houtte*, *Souvenir d'Elise Vardon*, *Caroline Kuster*, *Hon. Edith Gifford*, *Madame Hippolyte Jamain*, *Comtesse de Nadaillac*, *Jules Finger*, and *Ama Ollivier*. The second prize was won by Mr. Knight.

In class 4, six varieties, four trusses of each, Mr. R. E. West was the only exhibitor. He showed a very fine lot of the following varieties:—*La France*, *Madame Victor Verdier*, *Merveille de Lyon*, *Etienne Levet*, *Baroness Rothschild*, and *Marie Rady*. In class 5, for the best twelve, the first prize, a cup value two guineas, presented by the Mayor of Canterbury, was won by Captain Martin with fine blooms of *Dr. Andry*, *Etienne Levet*, *Baroness Rothschild*, *Ulrich Brunner*, *Marquise de Castellane*, *Hon. Edith Gifford*, *Duchess of Bedford*, *Duke of Edinburgh*, *A. K. Williams*, *Prince Camille de Rohan*, *La France*, *Susanne Marie Rodocanachi*. The second went to the Rev. T. R. Buchanan. In class 6, for nine Teas and Noisettes, the first prize was won by Captain Martin with *Hon. Edith Gifford*, *Madame Berard*, *Marie Van Houtte*, *Souvenir d'un Ami*, *Madame Cusin*, *Catherine Mermet*, *Rubens*, *Souvenir de Thérèse Levet*, and *Comtesse de Nadaillac*. Miss Hawkesworth was second, and Mr. W. Stoner third. In class 7, four varieties, three trusses of each, the first prize was won by Miss Hawkesworth with *Baroness Rothschild*, *Ulrich Brunner*, *Marie Van Houtte*, and *Duke of Edinburgh*. The second prize went to Mr. Stanley. In class 8, for nine varieties, Miss Rolt took first prize with *Souvenir d'un Ami*, *Marie Baumann*, *Duke of Edinburgh*, *Marie Finger*, *Duke of Teck*, *Charles Lefebvre*. Mr. R. Smith second. In class 9 Mr. S. Collard was first, Mr. Smith second, and Mr. Rolt third. In class 10, for best six Teas of any one variety, Mr. Cooper Wachter was first with fine blooms of *Maréchal Niel*; Captain Martin second with *Anna Ollivier*, and Col. Lambert third. For the best H.P., one sort, Mr. West was first with *Baroness Rothschild*; second, Mr. Hornby with *M. Bernardin*, and Mr. Knight third with *Gabriel Luizet*. For the best Hybrid Perpetual Mr. E. Martin took the medal with *Mabel Morrison*, and for the best Tea, Mr. Knight, with *Souvenir d'Elise*.

Some fine stands were exhibited in the nurserymen's class; especially good was that shown by Mr. Frank Cant, Colchester, to which the first prize was awarded. It contained the following:—Mrs. John Laing (very fine), *Ulrich Brunner*, *Pride of Waltham* (excellent), *Duke of Edinburgh*, *Madame Isaac Pereire*, *Duke of Teck*, *Victor Hugo* (a grand bloom), *Alfred Colomb*, *Souvenir d'un Ami*, *Dupuy Jamain*, *Innocente Pirola*, *Madame Gabriel Luizet*, *Prince Camille de Rohan*, *Maréchal Niel*, *Pride of Reigate*, *Comtesse de Nadaillac*, *Sultan of Zanzibar* (a grand bloom), *Her Majesty*, *Etienne Levet*, *Merveille de Lyon*, *A. K. Williams*, *Marie Finger*, *Alfred Dumesnil* (a magnificent bloom), *Marie Baumann*, *Ulrich Brunner*, *Niphetos*, *Comte de Raimbaud*, *Paul Regnon*, *Prince Arthur*, *Souvenir d'Elise Vardon*, *Mary Bennett* (a pretty bloom), *Lady Mary Fitzwilliam*. Mr. George Mount was second; Mr. Rumsey of Wrotham third; and Messrs. Thomas

Bunyard & Co., Ashford, fourth. In the class for twelve Hybrid Perpetuals and twelve Teas Mr. Frank Cant was again first; his blooms were Mrs. John Laing, Madame de Watteville, Etienne Levet, Innocente Pirola, François Michelin, Souvenir d'Elise Vardon, Ulrich Brunner, Marie Finger, Souvenir d'un Ami, Madame Cusin, Prince Arthur, Catherine Mermet, Victor Hugo, Souvenir de S. A. Prince, Camille de Rohan, Niphotos, Pride of Reigate, Francisca Krüger, Gloire de Bourg la Reine, Edith Brownlow, Duke of Teck, Rubens, Général Jacqueminot, and Marie Van Houtte. Mr. George Mount was second. In twelve Teas Mr. Frank Cant was again first with Madame de Watteville, Jules Finger, Niphotos, Madame Cusin, Innocente Pirola, Marie Van Houtte, Souvenir d'Elise, Comtesse de Nadaillac, Catherine Mermet, and Edith Brownlow. Mr. George Mount was second.

In the stand for a vase or epergne of Roses Mrs. H. B. Biron was first with a very beautifully arranged stand, in which her well known taste was conspicuous, and also in a very exquisite shoulder knot. There were also some very pretty arrangements of buttonhole bouquets.

The weather was again unpropitious; it had interfered with many exhibitors, amongst others with the indefatigable Secretary, the Rev. H. B. Biron. Anyone who knows his garden on a cliff can quite understand what effect a S.W. gale, combined with torrents of rain, such as we had on Monday, must have had upon it, and consequently he was completely prevented from exhibiting any of his flowers. The uncertainties of our climate are indeed very perplexing and disappointing to those who depend upon it, and certainly Rose growers are as much so as most people. We had hoped for a favourable time, but alas! it seems as if we were again to experience the misery of disappointed hopes. The wonder is that any Roses are exhibited, but the friends of the Rose at Canterbury are not easily discouraged, and the excellence of their Exhibition will encourage them to go forward.—D., *Deal*.

ELTHAM.

ALTHOUGH within only eight miles of the General Post Office Eltham is comparatively unknown, yet is it a place not only of deep interest, but of Old World character, and although there have been built a large number of villas, yet somehow or other it has not been very popular, and the old street still smacks of the olden time, and many nurseries crowd around the Palace, now called Eltham Court. Here our kings held courts and parliaments, here were entertained kings from far off Armenia; in the parks that surrounded it they hunted, and they have left in the grand banquetting hall a remnant of its former greatness, for no more beautiful specimen of perpendicular domestic architecture can be found anywhere. Eltham, too, has its modern associations. Here Vandyke lived; here, too, died Doggett the comedian, the founder of "the coat and badge" rowed for by the Thames watermen; here Mr. Blenkiron had his celebrated stud of horses, and here at his sale Blair Athol fetched 13,000 guineas; and last, but not least, here died William Sherard the botanist, the author of "*Hortus Elthamensis*," and the founder of the professorship of botany at Oxford.

In the ground attached to Eltham Court, as the palace is now called, the residence of that very earnest and energetic member of the National Rose Society (Mr. Bloxam) which has often benefited by his counsels, was held the annual Rose Show on Saturday last, and I think all concerned in it may be heartily congratulated on the great improvement which has taken place in the quality and extent of the flowers exhibited. Time was when a friend used to say of it, "Mrs. — first and the rest nowhere," so great was the difference between her stand and the others shown. It is not so now. The competition was very keen, and the second and third stands contained very beautiful flowers. In the class for eighteens Mrs. Fuller, Bexley Vicarage, was first also with fine blooms of Capt. Christy, Etienne Levet, Pride of Waltham, Heinrich Schultheis, Louis Van Houtte in fine bloom, which ran François Michelin very hard for the silver medal; Mrs. John Laing, Baroness Rothschild, Abel Carrière, Maréchal Niel, Duke of Edinburgh, a finely coloured bloom; Ulrich Brunner, Marie Finger, Her Majesty, Xavier Olibo, Marie Verdier, Gabriel Luizet, Magna Charta, A. K. Williams, and Merveille de Lyon. Mr. Shea was second and Mr. R. Bloxam third. In the class for twelves Mr. Shea was first, Mr. A. Biron second, and Mr. A. Harris third. Mr. Shea's blooms were White Baroness, Queen of Queens, Her Majesty, Baroness Rothschild, Marie Finger, Comtesse d'Oxford, Marquise de Castellane, Marie Cointet, Prince Arthur, Captain Christy, Duke of Edinburgh and Duchess of Vallambrosa. In the class for four trebles Mr. Fuller was first, La France, Baroness Rothschild, Louis Van Houtte and Heinrich Schultheis. In the class for sixes Mr. Bryan was first and Mr. Shea second. The blooms in the first box were Captain Christy, Charles Lefebvre, Duke of Edinburgh, La France, Madame Isaac Pereire and Merveille de Lyon. In Teas Mr. Bloxam was first with America, Anna Ollivier, Madame Lambard, Hon. Edith Gifford, Caroline Kuster and Madame Villermoz. For six of any one sort Mrs. Fuller was first with clear, bright blooms of Gabriel Luizet.

Turning now to the other side of the tent where were staged the nurserymen's and open stands, there needed not much forecasting to say, when such growers as Mr. B. R. Cant, Mr. Frank Cant, and Messrs. Paul & Son, entered the lists, and very fine flowers were staged by these celebrated growers. Mr. Frank Cant was first in twenty-fours with La France, Merveille de Lyon, Pierre Notting, Ulrich Brunner, splendid in colour; Her Majesty, Dupuy Jamain, Lady Mary Fitzwilliam, Duke of Teck, brilliant in colour; Souvenir d'Elise Vardon, Star of Waltham, Gabriel Luizet, Duke of Wellington, Niphotos, Dr. Sewell, Mrs. John Laing, Etienne Levet, Madame Cusin, Mons. E. Y. Teas, Catherine Mermet,

Pride of Reigate, Comtesse de Nadaillac, Annie Laxton, Pride of Waltham, and A. K. Williams. Mr. B. R. Cant was second with a stand which ran the first very close. His blooms were Victor Hugo, Lady Mary Fitzwilliam, Louis Van Houtte, Mrs. John Laing, Gabriel Luizet, Ulrich Brunner, La France, Charles Lefebvre, Baroness Rothschild, François Michelin, Merveille de Lyon, Comtesse d'Oxford, Prince Arthur, Duke of Edinburgh, Magna Charta, Boieldieu, Marie Finger, Marie Verdier, Dr. Andry, Alfred Colomb, and Heinrich Schultheis.

In the class for twelve Mr. Frank Cant was again first with Etienne Levet, Marie Baumann, Duke of Wellington, Captain Christy, Catherine Mermet, Duke of Teck, Ulrich Brunner, Duke of Edinburgh, Boieldieu, Gabriel Luizet, E. Y. Teas, and Marie Van Houtte. Messrs. Geo. Bunyard & Co. of Maidstone were second with excellent blooms of Horace Vernet, Ulrich Brunner, Her Majesty, Madame Eugène Verdier, Marie Rady, Marquise de Castellane, Baroness Rothschild, Madame Victor Verdier, La France, Souvenir d'Elise, and Magna Charta. In twelve Teas Mr. Frank Cant was again first with Innocente Pirola, Souvenir d'Elise, Souvenir d'un Ami, Hon. Edith Gifford, Princess of Wales, Jean Ducher, Catherine Mermet, Marie Van Houtte, Madame de Watteville, Niphotos, Madame Cusin, and The Bride. Mr. B. R. Cant second with Niphotos, Comtesse de Nadaillac, The Bride, Catherine Mermet, Devoniensis, Madame Cusin, Rubens, Marie Van Houtte, Caroline Kuster, Souvenir d'un Ami, Innocente Pirola, and Souvenir d'Elise. The prize given by Mr. Geo. Prince for twelve Teas was won by the Rev. F. H. Gall, Madame Hoste, Princess of Wales, Madame Thérèse Levet, Comtesse de Nadaillac, Madame Van Houtte, Madame Lambard, Souvenir d'un Ami, Anna Ollivier, Maréchal Niel, Niphotos, and Hon. Edith Gifford.

The whole Exhibition was a most excellent one. The cottagers' productions were most creditable; specimens of bread-making, needlework, and other useful things were exhibited in considerable quantities, while the table decorations showed a vast improvement. They were simple and elegant instead of being coarse and crowded. The bouquets and other arrangements of flowers were in excellent taste. The only thing wrong was the weather, which was showery and unpleasant; but all connected with the Exhibition may be congratulated on the evident advance that has been made.—D., *Deal*.

HITCHIN.

THE grounds of the Priory were once more thrown open to the Hitchin Rose Society for their annual Exhibition, and a more fitting place, with its beautiful surroundings, quite close upon the old-fashioned county town, which, in spite of railroads, gas, and all other modern appliances of civilisation, still retains its quaint and picturesque character, could not possibly be. In former days Hitchin was noted both for its manufactures and its coachings. These have both departed, but reminders of them still exist. The "Star," with its grand old-fashioned garden and bowling green, where in former days the fathers of the town used to assemble, smoke their churchwardens, and drink their gin, is in itself worth a visit, while there are houses and gardens in the town which are alike admirable and suggestive of refined taste, and one may add of quiet lives, and I have never met anyone who visited the town for the first time who is not charmed with its old time character.

The Hitchin Rose Society has now been twelve years in existence, and owes its present position in great part to the energetic labours and enthusiasm of the Rev. F. H. Gall, who regards it with all the affection of a parent and the love of a rosarian. He had anticipated a very large Show this year, as growers from all parts had promised to attend, but alas! for all such hopes, the stormy rainy weather of the past week had dashed them, and although a good and effective exhibition was held, the number of exhibits fell far short of his expectations, but the quality of many of the stands was excellent, and in some cases could not easily be surpassed.

In class 1, for thirty-six distinct, nurserymen, Messrs. Paul and Son were first with Ulrich Brunner, La France, Duke of Edinburgh, Alba Rosea, Mrs. John Laing, Etienne Levet, Her Majesty, Merveille de Lyon, Prince Camille de Rohan, Pride of Waltham, Prosper Laugier, Marie Verdier, Abel Carrière, Lady Mary Fitzwilliam, Louis Van Houtte, Madame Geo. Schwartz, Sultan of Zanzibar, Marie Van Houtte, Xavier Olibo, Countess of Pembroke, Madame Victor Verdier, Queen of Queens, Mrs. Charles Wood, Princess Beatrice, Maurice Bernardin, Violette Bouyer, François Michelin, Captain Christy, Grandeur of Cheshunt, Heinrich Schultheis, Duchesse de Morny, Ollivier Delhomme, Souvenir de S. A. Prince, Lady Helen Stewart, Marie Finger, Alphonse Soupert, The Bride, Prince Arthur, and Madame Prosper Laugier. In this stand there were some very remarkable flowers. Messrs. Burrell & Co. were a good second, Messrs. Burch & Co. third, and Mr. John House fourth. In class 3, for twenty-four distinct, Mr. E. B. Lindsell was a long way ahead with a box in which there was not an imperfect flower, and blooms of many of the varieties were such as one does not often see, more in the matter of colour and substance than in size, a quality which I think is beginning to take its proper place in the estimation of Rose lovers as quite secondary to the others. The flowers were A. K. Williams, La France, Louis Van Houtte, Ulrich Brunner, La France, Duke of Edinburgh, Alba Rosea, Marquise de Castellane, Lady Mary Fitzwilliam, Charles Lefebvre (a beautifully coloured flower), Baroness Rothschild, Ulrich Brunner, Prince of Wales, Princess of Wales, Marie Baumann, Abel Carrière, Souvenir d'Elise Vardon, Prince Arthur, Gabriel Luizet, Rosieriste Jacobs, Mrs. John Laing, Dr. Andry, Duchesse de Morny, Earl of Dufferin, Prince Camille de Rohan,

Duke of Edinburgh, Countess of Rosebery, Le Havre, Grace Darling, Mrs. John Laing, Marquise de Castellane and Comte de Raimbaud.

In class for eighteen Teas and Noisettes the Rev. F. A. Burnside of Birch Vicarage, Hereford, was first with Innocente Pirola, Anna Ollivier, Madame Cusin, Comtesse de Nadaillac, Madame Bravy, Jean Ducher, Marie Van Houtte, Souvenir d'un Ami, Comtesse Panisse, Souvenir d'un Ami, The Bride, Jules Finger, Catherine Mermet, Rubens, Francisca Krüger, Niphotos, Madame de Watteville, Caroline Kuster, and Hon. Edith Gifford. The Rev. W. H. Jackson of Stagsden Vicarage was second. In class 5, for twelve Teas and Noisettes, Mr. E. B. Lindsell was first with Maréchal Niel, Madame Cusin, Comtesse de Nadaillac, Souvenir d'Elise Vardon, Marie Van Houtte, Prince of Wales, Catherine Mermet, Niphotos, Francisca Krüger, Souvenir d'un Ami. The Rev. F. R. Burnside was second, and the Rev. W. H. Jackson third. In class 6, for twelve, Mr. Tims was first with good blooms of Ulrich Brunner, Marie Verdier, Madame Hippolyte Jamain, Mrs. Baker, Caroline Kuster, La Rosière, The Bride, Dr. Andry, Rosieriste Jacobs, Etienne Levet, and Louis Van Houtte. Mr. Moule was second, the Rev. F. H. Gall third, and Mr. Parker fourth. In class 7, for nine blooms, Miss A. Lucas was first with Captain Christy, Ulrich Brunner, La France, Duchess of Bedford, Gabriel Luizet, Dr. Andry, Duchess of Vallombrosa, Duke of Wellington, and Merveille de Lyon. Messrs. Bailey, Denton, were second, and Mr. W. and Dr. B. W. Keston fourth. In class 8, for six blooms, Mrs. A. Times was first with Ulrich Brunner, Madame Gabriel Luizet, Horace Vernet, Maurice Bernardin, A. K. Williams, and Charles Darwin. Mr. G. Preece of Sandy was second, and Mr. W. Pearn third. In class 6, for nine Teas, Mr. G. Moules was first with Madame de Watteville, Caroline Kuster, Catherine Mermet, Jean Ducher, The Bride, and Marie Van Houtte, Mrs. Tims second, Mr. Preece third, and the Rev. F. H. Gall fourth.

In class 10, for the best six of any one Rose, Mr. Lindsell was first with beautiful blooms of A. K. Williams; the Rev. W. H. Jackson second; Mrs. B. A. Denton third. In class 11, for the best six of any one kind of Tea, the Rev. W. H. Jackson was first with Marie Van Houtte, and Mr. E. B. Lindsell second with Anna Ollivier. In class 12, for those who had never won a prize, Mr. G. Prince was first with La France, Reynolds Hole, Louis Van Houtte, Lady Mary Fitzwilliam, and Madame Gabriel Luizet. The Rose Society's silver medal for the best H.P. was awarded to Mr. Lindsell for a fine bloom of Charles Lefebvre, and another for the best Tea to Rev. F. R. Burnside for Anna Ollivier, the latter and other decorations were very good. Not the least interesting feature of the Show was the exhibition of cut blooms of herbaceous plants, especially from Mr. John Burrell of Cambridge, a grand lot, consisting of large bunches of flowers.—D., Deal.



FRUIT FORCING.

PINES.—*Starting Suckers.*—Those suckers will soon be fit to take from the plants which formed the early section of summer fruiterers. Necessary provision for starting them must be made at once, so that the plants may have the benefit of the undiminished solar heat in developing growth for as long a period as possible. Proper means are a fermenting bed in a low house or pit, the heat being steady at about 90° 6 inches from the surface, but a few degrees higher may be allowed at the start. The suckers should be taken from the parent plants, and then placed directly into 5 or 7-inch pots according to the size of the plants or suckers, and supply water once in order to settle the soil about them. Good fibrous loam torn up by hand without any admixture is the most suitable compost, which should be firmly embedded in the pot, and will tend to cause speedier root action and sturdier growth. For a week or ten days keep the house or pit rather moist and close, shade effectually, and admit but little air, sprinkle through a fine syringe once or twice a day according to external influences. As soon as growth takes place more ventilation with less shade is desirable, which must be proceeded with gradually until growth is well decided, and the plants are inured to the sun, when ordinary treatment should be given.

Treatment after Rooting.—Once the plants are started they must not be allowed to become root-bound, but the growth accelerated as far as it is consistent with sturdiness, consequently there must not be any delay in shifting into the largest pots immediately the roots have taken to the soil, and before they become matted together at the sides of the pots. The size of the pots should be in accord with the requirements of the plants. For Queens and Black Jamaicas 10-inch pots are suitable, and for other sorts 11 or 12-inch pots, using fibrous loam, but more lumpy than for suckers, adding a sprinkling of bonemeal, and to prevent worms entering the pots a handful of soot or wood ashes may be sprinkled over the drainage.

MELONS.—*Fruits Cracking.*—Why should the Melon and other fruit crack? Some insist on its being due to excessive moisture, others are equally confident that air moisture is the cause of the mischief. Perhaps

there is truth in both, but the greater fact remains that Melons will and do split, and we have ever found it due to cultural defects. Some varieties are more subject to it than others; the hard rinded and scarlet fleshed the most; the soft and thin rinded and white fleshed the least. Those that are troubled with cracked fruits year after year should grow more varieties, and make selection of those best suited to the location or means of culture, for though the climatic conditions may vary little in different localities, it very often is sufficient to mark the distinction between success and failure. An excess of root moisture when the fruit is full sized and should be ripening is undesirable. Air moisture also should be less when the fruit is ripening than when it is swelling, for a fruit grown in a comparatively dry atmosphere during the swelling period will require a correspondingly dry atmosphere when ripening. In houses a gentle warmth in the pipes and a free circulation of warm air constantly prevent moisture condensing on the fruit; and by cutting the stem about half through below the fruit excess of root moisture is prevented. All this might be avoided by affording more liberal supplies of moisture at the roots and a somewhat moister less freely ventilated atmosphere during the swelling of the fruit, with a slight shade for a few hours at midday from powerful sun during a prolonged period of bright dry weather.

Scorching.—This is not common with Melons, but we have had the sun scorch the soft thin-rind varieties after a period of dull wet weather succeeded by bright. This, of course, occurred in frames, yet we have seen it in houses. The leaf tissues, indeed all the tissues of the plant, not excepting the fruit, had become soft and watery, therefore liable to evaporate more quickly than the roots could or did supply matter for elaboration, and the foliage flagged and fruit became highly heated, having the rind scorched similiar to scalding in Grapes. There is no remedy so effectual as a little ventilation at night, increasing it early in the morning, and a slight shade from fierce sun so as to prevent the foliage flagging and the sun from heating and drawing the watery matter from the interior of the fruit to the surface to be scorched between the inner and outer skins. A few days' attention to shading during bright weather succeeding a dull will mostly be highly beneficial to swelling and ripening crops.

Late Crops.—Late plants should be planted without delay, especially where the means of affording artificial heat is confined to fermenting materials. Whether grown in pits or frames sufficient materials should be used to raise a bottom heat of about 90°, so as to start the plants quickly. A compost of good loam rather strong, with about a fifth of old mortar rubbish incorporated and put in firm, will secure a sturdy short-jointed growth and an early, plentiful show of fruit.

In houses as the crops are cleared the plants if exhausted should be removed, and preparations made for a fresh start at the earliest opportunity; but if the plants are in good health it is folly to root them out, as they will come into bearing much sooner than young plants, and are in every way more tractable. If the old plants have not been over-cropped, have had sufficient water at the roots, and the foliage is healthy, they are good for another crop. When the crop is cut the plants should be divested of damaged leaves, fresh growth being encouraged in place of any exhausted, which should be cut away. The surface of the bed should be loosened, removing the loose soil, then applying a couple of inches depth of fresh loam, with a sprinkling of some approved fertiliser intermixed, giving a good watering, and when fresh growth commences afford liquid manure, treating as for former crops. On the continuous system fruit will show and set freely on the laterals after a few joints of growth. Fertilise and encourage swelling, affording copious supplies of water or liquid manure to the roots, and maintain a genial condition of the atmosphere by sprinkling available surfaces two or three times a day and syringing at closing time, which should be sufficiently early to raise and maintain a temperature of 90° to 95° for some hours afterwards. The fruit will then swell to a good size, and be quite equal in quality to the best of first crop.

Routine.—Attend to stopping, thinning, tying, or otherwise regulating the shoots. Pressure of other work must not be allowed to interfere with this where health of plant and quality of fruit are considered, for as the foliage and fruit have means of elaborating and assimilating the crude material, so is the fruit affected favourably or otherwise. Successional plants should be earthed up as soon as the roots show at the sides of the hillocks, making the soil firm, being careful that the plants have enough water, yet, on the other hand, are not too wet. Maintain a bottom heat of 80° to 85°, and afford a moist atmosphere to growing crops, syringing freely, excepting when the fruit is setting or ripening, being careful not to let one or two fruits take the lead in swelling where more are required on a plant, but have them all as nearly as possible of one size. This is a matter not only affecting swelling, but quality. Those that receive most support not only are larger, but as a rule have thicker and richer flesh than those latest in swelling.

KITCHEN GARDEN.

EARLY PEAS.—The dull wet weather throughout June has been much against the pods filling rapidly, and the haulm has run up to an unusual height. Had we not pinched the tops out of the growths in May we would have gathered but few dishes in June, but the stopping is a sure means of inducing early maturity, and those whose early Peas are still unready should take every top off at once. The sooner they are ready and used now the better, as the second early and main crops will form and fill their pods should the weather become sunny and dry,

and there may a glut of Peas shortly. Readers often ask, "Do you consider this a good season for Peas and other crops?" and as regards the early Peas at least the reply is not the best. Some who have omitted to sow their late Peas may be encouraged to know that we are this week sowing several rows of our latest. Should the autumn prove unfavourable these may not be very remunerative, but if good they will yield freely in October and probably November.

WINTER GREENS.—These are not all planted out. Like many others we are deficient of space. Some large quarters of Brussels Sprouts, Savoys, and Broccoli have been put out, but not in sufficient quantities to keep up with our demand, and as the plants are inclined to become tall and to be spoiled in the seed beds, the largest will at once be drawn out and planted a few inches apart in spare corners. The planting will check them a little, they will soon assume a more sturdy form, and they will be in good order for planting out in their bearing quarters by the time early Potatoes, Turnips, and Peas are cleared off. That will be towards the end of July, which is not too late to plant out the last crops.

PESTS.—These have been somewhat troublesome; snails have been destructive to the young Greens, the Turnip fly on the Turnips, while some of the Savoys, Cauliflowers, &c., have lost their centres, the plants in consequence becoming "blind." Our only remedy for all is to dust the plants frequently with fresh lime or soot.

CAULIFLOWER AND BROCCOLI FOR AUTUMN.—These are distinct from the summer or winter varieties, and like many others we have ceased to experiment with other sorts, and now confine our culture to Veitch's Autumn Giant Cauliflower and Self-protecting Autumn Broccoli. The Cauliflower is a useful one for the end of summer, but particularly so in September and October, and all who desire a certain supply of heads at that time should place out plenty of plants at present. It takes them from three to four months to form heads, and when they once begin to "turn in," the same plants will furnish heads for six weeks or two months. The Broccoli is equally useful, as it heads with unvarying regularity in November, and when the frost is not too severe it is in season all through December, and for November and December it may always be relied on. It requires a little longer to produce flowers than the Cauliflower, but if both are planted together early in July they will follow each other in giving a supply. Both produce large heads in heavy rich soil, but medium-sized heads are often more valued, and these may be grown in light soil, with the plants at a distance of 18 inches from each other.

CARROT AND ONION GRUB.—Of late we have noticed Carrots and Onions a little yellow in the foliage. This is a sure indication that the grubs are beginning to attack the roots, and prompt efforts should be made to check this before they are in full possession of the crop. We have had considerable experience and annoyance in former years with this, and after trying every imaginable remedy, nothing equalled gas lime in stopping the plague and allowing the plants to resume their perfect growth. The gas lime should be sifted fine and sprinkled between the rows and over the top of the plants. We neither measure nor weigh it, but sprinkle it on at a rate we regard as safe, applying it rather thin, and repeating the application if necessary.

TURNIPS FOR AUTUMN.—Much of the Turnip seed sown in the spring produces plants that develop a seed stem before the roots have grown much, but this rarely occurs with autumn Turnips, and if a large quarter is sown now to give a supply in September the same will remain sound and good until well into winter. Veitch's Red Globe or Carter's Jersey Lily are excellent varieties for present sowing. The latter is one of the most handsome Turnips in cultivation and one of the best for exhibition. The soil for the present sowings must not be too sandy, but moderately well warmed. We have sown 1 lb. of seed to-day on a piece of ground just cleared of spring Spinach and Potatoes. The soil was merely forked over without adding manure, and the rows opened at 1 foot apart.

VEGETABLE MARROWS AND RIDGE CUCUMBERS.—These have not taken kindly to their mounds this year. The weather has been too sunless of late for them. This causes them to produce a thin flabby growth of a most unfruitful kind, and the plants intended to produce early fruits of both should either have their main shoots tied up to stakes or place some Pea stakes or latticework under them to keep them up from the damp cold ground. If dry air can reach the flowers when they are open the fruit will set, but if the flowers are under large leaves and in the shade, or exposed in such a way that the rain fills them, week after week will pass without a fruit forming. Keep the shoots freely thinned, and if the plants are later than usual, try and place a frame and light over some of them for a few weeks, to secure early fruits.

LEEKs.—The main crop of these should be planted out. Although of little importance now, they are extremely useful as winter vegetables, and after a severe winter they are often amongst the few crops that have survived. Then they are acceptable on the best tables. In private gardens there is often a deficiency of them, and they should be planted more extensively. Large specimens, such as are seen at shows, are not the best for standing a severe winter. Plants that some would consider small are the best, and these are of a suitable size for cooking whole. Do not, therefore, dig deep trenches for the main crop of Leeks, but apply manure to a piece of ground, dig it, and open drills 3 inches deep and 12 inches apart. Into these dibble the Leeks at a distance of 6 inches apart, and the result will be a useful crop.

THE BEE-KEEPER.

APIARIAN NOTES.

THE WEATHER.

THE weather during the past week has been more wintry than ever. With the exception of Sunday, the 29th June, sunshine has never been more than of a few minutes duration. On that day the sun shone for about twelve hours, but a little east and west of us the thunder rolled and the rain poured in deluges. Rain has fallen more or less every day since the 4th of May. It is the wettest season I ever experienced, and probably the lowest temperature. On Friday, the 27th June, the temperature rose suddenly from 55° to 65° for a few minutes, then sank as suddenly to 48°, when a storm of hail came on with the strong north wind. July the 4th was dull, but more genial than since June came in. The temperature rose for about five minutes on the 1st to 70°, but at other times was between 50° and 60°. The barometer is now standing at 29.50°, but I dare not predict what the next hour will be. The Poppies and other flowers have expanded, which gives us hope that an improvement in the weather is near. These short glimpses of sunshine induce the young queens to take a flight, but the drones are not so venturesome, and are becoming rapidly fewer in number by the bees killing them. This has continued since the middle of May, and why is it? Have the bees the foreknowledge of the coming weather for weeks to come? Their conduct seems to point to this, and the same has been observed by many people and for many years; even those hives that made much weight from the Sycamores are no exception, nor whether the queens are fertile or not. We know that bees apprehend the coming storm for some days previous to it, and everything goes to prove they know what is coming for weeks together.

The wet weather is telling seriously on all crops, and without an improvement and feeding most bees will become extinct. Probably, however, it is doing good for time to come by the extermination of many moths, and caterpillars may not be so numerous as they have been. Although the mercury is low, while I write the aspect of the sky is brighter, the bees are venturing out, and if we had a little more heat and sunshine than we have had all would be benefited thereby.

DO BEES PAY?

We answer the question in the affirmative, but not in the sense that our contemporaries have taught, that bees will "pay" with honey selling at from 3d. to "6d. per lb.;" nor dare I support the statement that "£7 can be made on an average annually from one hive." While encouraging all who have an opportunity to keep bees, I must specially warn them against starting bee-keeping on an expensive and extensive scale. I have evidence before me of more than one who has made a good deal of money, but it has been from bee-keepers, and not from the bees. There is as much in saving as in earning, and bee-keepers as well as others might study this to their advantage. One of the first lessons is important. I give it cheerfully and gratis. Put more confidence in yourself and in your own doings than in those who pose as benefactors. By practising that you will be the gainers. One dealer and writer to the press on bee matters advises "all to keep bees." If one in a hundred were to start bee-keeping on the lines he proposes they would never get a drop of honey, or if they did it would be at an enormous expense. Ample information is given in these pages to enable anyone to start bee-keeping with little outlay at first, and but little expense after if the bee-keeper only exercises a little forethought and judgment.

THE SHALLOW HIVE.

The hive I have used so long, and which has been claimed by so many, is not only the best hive for every phase of bee-

keeping, but all the necessary appliances in the apiary for shallow hives can be purchased much cheaper than where larger frames are used. Extractors for shallow frames can be bought at but a few shillings, and a comb-foundation machine of the very best make, with all its requisites, can be had for less than £4. No implement gives a better return for money laid out than this one does, and when it is taken into consideration that by it nothing but native wax may be employed, the value of both it and the honey is enhanced, the last named being of greater importance to the bee-keeper than many suppose. Some manufacturers pretend to hold secrets for the manufacture of comb foundation. I do not believe it. I was the first to make public the mode of manufacture, and I am prepared to give to *bonâ fide* amateurs and readers of this Journal all the necessary information for the making of comb foundation.

POLLEN STORES.

Another valuable lesson afforded by seasons such as this is in regard to pollen. Hives that had large stores of pollen last autumn did not lose their bees to the same extent in spring, and I may add summer, as those that had but little. At the present time hives having young but unfertile queens are storing pollen in large quantities on every favourable occasion. Now what is that for but preparing for their future wants? and yet we are told by some to remove the pollen clogged combs!

FEEDING IN DRIBBLETS.

This is recommended, but nothing nearer than feeding in dribblets could be approached than the small quantities of honey that has been gathered by the bees during June and the first week of July. The result is that bees out in search of honey have been lost in thousands, and brood drawing has gone on notwithstanding to an alarming extent, just as is the case when artificial feeding has been resorted to. I know the benefit of feeding, but I also know the mischief it creates as well as anyone.

The sky is as gloomy as it was bright only half an hour ago, and a few days longer will end all hopes of the honey season for 1890, when the order of the day will be nothing but feeding; and owing to so few young queens being fertilised, the caution becomes greater as to what we shall feed. I shall do all I can to ensure fertilisation; failing that, the queens that have bred least will be the only ones kept. The most important thing to attend to when feeding is to prevent robbing.

ROBBING.

The best means to employ is to feed the bees at night, and give about 1 lb. at a time. When bees are fed rapidly in large quantities they become gorged, and are liable to be attacked by other hives' bees, and in that state offer no resistance, being rendered either unable or unwilling to do so. Whenever bees cease to resist invaders they should either be removed to some distance or shut up and well ventilated until they are in a fit state for defence. Robbing has been going on here ever since it was incited some weeks since by the exposure of combs containing honey. I do not approve of fumigating bees, but I stopped the robbing propensities of two hives by stupifying the bees with puff ball. This has different effects upon bees. Queens can be safely introduced, and different lots of bees joined, or site changed, by using it in a cautious and judicious manner. But I hope it will be unnecessary to use it, although I must admit that I never saw any after ill effects upon the bees when it was used in moderation.

YIELDS OF HONEY.

The largest yields of honey have always been gathered in July, and not unfrequently during the last two weeks of it. It may be earlier in the south, but whether we have finer and more favourable weather for honey gathering or not it will be well to keep up the feeding, so that the hives may be maintained in the greatest strength.—A LANARKSHIRE BEE-KEEPER.



*** All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

A Peculiar Foxglove (W. W.).—It is not unusual for the uppermost flowers to assume the bell-like form characterising those sent by you. We have had several similar examples this year. It is an instance of a normally irregular flower becoming regular in form, and is occasionally seen in other flowers having peculiar corollas.

Eradicating Weeds in Ornamental Water (H. P.).—The only effectual means of destroying Equisetum is to cut off the supplies on which it thrives. To let off the water and remove a portion of the roots is practically useless, as the roots penetrate to a great depth, and cannot all be removed, and at best it would be a temporary expedient. The only means likely to do any good is to cut off the growths more frequently, so as to weaken the roots. Drainage is the only effectual means of eradicating Equisetum.

Muscat Grapes Spotted (Foreman).—The berries are spotted through moisture remaining on them some considerable time. This may have resulted from syringing, a leaky roof, or a close moist atmosphere, and the temperature falling too low at night. This would cause water to form—it may be in unobserved particles, still sufficient to prevent transpiration, and cause the injury to the skin. This would be the more likely to occur if the sun raised the heat considerably before air was admitted to expel the moisture and allow the Grape fluids to become gradually warmed equally with the surrounding air. The moisture condensed on the berries prevents that, and the result is the spot with scorching and scalding, if not shanking later on. Admit air earlier, and maintain a genial atmosphere.

Cauliflowers Injured (W. J.).—Nothing will save the plants that are badly attacked. It is caused by a small white maggot, the larva of a weevil (a species of Curculio). Watering the plants with a solution of nitrate of soda at the rate of half an ounce to a gallon of water will do good, and cause fresh growth in the plants if they are not too far gone. It usually prevails where plants of the Cabbage tribe have been grown on the same ground for several seasons. If the Brassicas are much subject to it in your soil dress the ground liberally with soot and wood ashes, and in autumn or spring with lime. In bad cases the best of all preventives is gas lime fresh from the gas works, at the rate of a peck per rod, distributing it evenly, which may be facilitated by mixing it with dry soil or ashes, and allow it to remain on the surface a few days, then point it in very lightly, merely picking the surface over with a fork. It should be applied a month or six weeks before putting in the crops, and must not be used over the roots of fruit trees.

Treatment of Old Bouvardias (S. T.).—Old plants that have been cut back and have started into growth should have their old roots partially reduced and repotted in fibry loam, a seventh of manure, and sand. Place them in a cold frame and keep close until rooted. Stop any shoots that take the lead as they require it, in order to keep the plants bushy. After they have commenced active growth they can be grown under cool-frame treatment, or be plunged outside in their pots, or planted out in a warm sheltered position; the latter, in favourable localities, being an admirable practice. Young stock rooted early are now established in small pots, and the points of the shoots must be pinched out when three or four joints of wood have been made. Give more air than has been necessary up to the present time in order to have a firm sturdy growth. These can either be placed when ready in their flowering pots, or planted out and treated like the old stock. Those only just rooted should be grown on in pots in heat for some time yet, and if then placed in cooler quarters will make valuable plants by winter.

American Blight on Apple Trees (W. J.).—This is a most difficult pest to eradicate when it obtains firm possession of Apple trees. The best applications we have tried are methylated spirit and petroleum. Both are tedious processes, but they are certain. The latter we have known to clear the pest from fifty acres of trees. This was effected by boys each provided with a blacking bottle with a piece of No. 8 wire

twisted round the neck so as to form a handle similar to a frying pan, and a medium-sized half-worn clean paint brush with which to apply the petroleum wherever the pest showed itself. The brush was dipped in the petroleum, with strict orders not to let it run down the bark. It destroyed the aphid and did no harm to the trees beyond scorching the leaves and young shoots where it had been negligently applied. For larger trees in orchards we have found petroleum equally effective. Methylated spirit is too expensive to be used for any but garden trees. A clear bottle with a rather wide neck is best for holding the spirit, and if it have a handle smaller but similar to that described for the blacking bottle it is more handy. A very small brush dipped lightly in the spirit and applied to the patches of aphides runs through the nest, despite of their woolly covering, and does not injure the trees in the least. Of course care is taken not to use the spirit recklessly. The spirit should be kept well corked when not in use.

Epiphyllums (*C. R. M.*).—Cuttings should be inserted in spring in light open soil in a brisk heat, keeping moist, but avoiding watering more than to keep the soil in a moderately moist state, the cuttings being inserted around the sides of the pots, and when rooted potted off singly in 3-inch pots. If the plants have filled the pots with roots, and have made, or are making, good top growth, shift into 4½-inch pots in May or June, and by the end of July or early in August the growth will be complete. They should then have a lessened supply of water, and the sprinkling overhead be discontinued, and have a light and airy position. A warm greenhouse or cool stove gives the most suitable temperature, but the plants may be grown very well by those having in addition to a greenhouse a vinery started in February or March, which from the moisture and heat will conduce to a vigorous growth, that being completed by the time the Grapes are ripening, when the plants may be removed to a light airy position in the greenhouse with water only to keep the growths fresh. The plants if kept in an intermediate house will commence flowering in November and continue until February. If they have a month to six weeks of this rest after flowering they subsequently grow much more vigorously. When growth commences the plants should be repotted, taking away as much of the old soil as possible without injuring the roots, and they may be returned to the same pots, adding fresh soil. The most suitable compost is light turfy loam, very fibrous, and chopped up moderately small, with an addition, in equal proportions, of dry cowdung, sharp or river sand, and crocks—or what is better, soft bricks broken into small pieces. The potting should be moderately firm, and the drainage thorough. When in free growth and the roots active liquid manure may be given abundantly; a peck of cowdung to 20 gallons of water answers well, or 1 peck of sheep droppings to 30 gallons of water, 1 peck of soot to 30 gallons, or 1 lb. of guano to 20 gallons of water, avoiding making the soil sodden, and leaving off the applications of manure water when the growth is complete. Useful and attractive as are plants on their own roots, those grafted on *Pereskia* stock (*Pereskia aculeata*) are superior both in vigour of plants and their ornamental character.

Culture of *Centropogon Lucyanus* (*G. H.*).—The following is the experience of a successful cultivator:—"Cuttings taken with or without a portion of the old wood attached, root readily if inserted in sandy soil and plunged in slight bottom heat and placed in a close frame or under bellglasses. As soon as the cuttings are rooted they should be placed singly into 2 or 3-inch pots, and kept in a warm house until they commence growing freely. The growths of the young plants that have been rooted seldom extend to any great length, but after a time strong vigorous shoots are produced from the base. These, if pinched well back, will cause other strong shoots to spring from the base, which should be encouraged to extend. Stopping is of little service towards producing bushy specimens, for they seldom break into more than one or two shoots again at the most. If by repeated pinching bushy specimens could be produced it would by no means add to the beauty of these plants for purposes of decoration. As soon as the small pots are full of roots the plants should be placed in others 5 or 6 inches in diameter, which are large enough for decorative purposes. The pots should be drained liberally and the soil pressed moderately firm, especially when in the last-named sizes. They are not very particular about soil, and do well in almost any mixture; but the one we have found most satisfactory is good loam, a seventh of manure, a little charcoal, and a liberal dash of coarse sand. These plants should be grown warm until they are well established in their largest pots, and then more air should be given them until they can be gradually hardened to cool frame treatment during the warmest months of the year. They can remain in this position until there is fear of the temperature falling from 55° at night, when they must have a position where that temperature can be maintained. While under cool treatment the frame in which they are grown should be closed early in the afternoon while the sun is upon it. Light shade is beneficial during very bright weather in the earlier stages of the plants' growth, but at no stage must light be excluded from them. Towards the close of the season they must have full exposure to sunshine to harden and mature their shoots. The syringe must be used freely, for these plants are subject to red spider, and liberal applications of water must be given at the root while in active growth, and weak stimulants when the pots are full of roots."

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry

wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*Foreman*).—*Dictamnus Fraxinella*. See reply above as to Grape berries. (*C. H. B.*).—The purple flower is *Campanula glomerata*. The other plant is a *Taxus*, but we cannot name so small a piece. (*W. J. B. and F. H.*).—Insufficient. (*S. T. M.*).—You had evidently packed the specimens carefully and in accordance with our directions, but the box was unfortunately smashed in transit, and only two of the specimens came safely to hand, namely, 4, *Selaginella Martensi*, and 6, *Orchis maculata*. (*W. S.*).—*Juniperus virginiana*. (*Adolescens*).—Yes; the names you send are correct. (*J. C.*).—The small Orchid was completely withered; the *Sobralia* is a highly coloured variety.

COVENT GARDEN MARKET.—JULY 9TH.

THE wet weather is seriously affecting our business, and prices are consequently much depressed.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, ½ sieve	2	0	to	6	0	Lemons, case	10	0	to 15 0
" Nova Scotia and						Melons, each;	2	0	3 6
Canada, per barrel	18	0		25	0	Oranges, per 100 ..	4	0	9 0
" Tasmanian, p. case	15	0		0	0	Peaches, dozen	1	0	12 0
Cherries, per ½ sieve ..	3	6		12	0	St. Michael Pines, each	2	0	6 0
Grapes, per lb.	1	3		3	0	Strawberries, per lb.	0	2	0 6

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes, dozen	0	0	to	0	0	Mushrooms, punnet ..	1	6	to 2 0
Asparagus, bundle	0	0		0	0	Mustard & Cress, punnet	0	2	0 0
Beans, Kidney, per lb. ..	0	9		1	0	Onions, bushel	3	0	4 0
Beet, Red, dozen	1	0		0	0	Parsley, dozen bunches	2	0	3 0
Brussels Sprouts, ½ sieve	0	0		0	0	Parsnips, dozen	1	0	0 0
Cabbage, dozen	1	6		0	0	Potatoes, per cwt. ..	3	0	4 0
Carrots, bunch	0	4		0	0	" New, per lb. ..	0	2	0 0
Cauliflowers, dozen	2	0		4	0	Rhubarb, bundle	0	2	0 0
Celery, bundle	1	0		1	3	Salsify, bundle	1	0	1 6
Coleworts, doz. bunches ..	2	0		4	0	Scorzonera, bundle ..	1	6	0 0
Cucumbers, doz.	2	0		3	6	Seakale, per bkt. ..	0	0	0 0
Endive, dozen	1	0		0	0	Shallots, per lb. ..	0	3	0 0
Herbs, bunch	0	2		0	0	Spinach, bushel	1	0	2 0
Leeks, bunch	0	2		0	0	Tomatoes, per lb. ..	0	6	0 8
Lettuce, dozen	0	9		1	3	Turnips, bunch	0	4	0 0

CUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	2	0	to	4	0	Mignonette, 12 bunches..	2	0	to 4 0
Asters, per bunch, French	1	6		2	0	" Fr., large bnch	1	6	2 0
Bouvardias, bunch	0	6		1	0	Narcissus, 12 bunches ..	0	0	0 0
Carnations, 12 bunches ..	4	0		6	0	Peony, dozen bunches ..	6	0	12 0
" 12 blooms	1	0		2	0	Pansies, dozen bunches ..	1	0	2 0
Calceolaria, doz. bunches	4	0		6	0	Pelargoniums, 12 trusses	0	9	1 0
Cornflower, doz. bunches	1	6		3	0	" scarlet, 12 bnchs	4	0	6 0
Eschscholtzia, 12 bunches	2	0		4	0	Pinks (various), doz. bchs.	3	0	6 0
Eucharis, dozen	4	0		6	0	Primula (double) 12 sprays	0	6	1 0
Forget-me-not, doz. bnch.	1	6		4	0	Ranunculus, doz. bunches	0	0	0 0
Gardenias, 12 blooms ..	1	6		3	0	Roses (indoor), dozen ..	0	6	1 6
Iris, various, dozen bnchs.	6	0		18	0	" Moss (Eng.), 12 bch.	6	0	12 0
Lapageria, 12 blooms ..	2	0		4	0	" Red (Eng.), 12 bch.	2	0	6 0
Gladiolus, 12 bunches ..	4	0		9	0	" Red, 12 blooms ..	2	0	4 0
Gypsophila, per bunch, Fr.	1	6		2	0	" Tea, white, dozen ..	1	0	3 0
Lilium, various, 12 blms.	0	6		1	0	" Yellow	2	0	4 0
" longiflorum, 12 blms.	2	0		4	0	Spiraea, dozen bunches ..	6	0	9 0
Marguerites, 12 bunches	2	0		6	0	Tuberoses, 12 blooms ..	0	6	1 0
Maidenhair Fern, dozen						Wallflowers, doz.	0	0	0 0
bunches	4	0		9	0				

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Aralia Sieboldi, dozen ..	6	0	to	12	0	Geraniums Scarlet, p. doz.	3	0	to 6 0
Arum Lilies, per dozen ..	8	0		12	0	Heliotrope, per doz. ..	5	0	8 0
Arbor Vitæ (golden) doz.	6	0		8	0	Hydrangea, doz. pots ..	9	0	18 0
Azalea, various, per dozen	0	0		0	0	Lily of the Valley, 12 pots	0	0	0 0
Calceolaria, per doz. ..	6	0		9	0	Lobelia, per doz.	4	0	6 0
Climbing Plants, various,						Marguerite Daisy, dozen	6	0	12 0
dozen pots	4	0		9	0	Mignonette, per dozen ..	4	0	6 0
Cyclamen, per dozen ..	0	0		0	0	Musk, per dozen	2	0	4 0
Deutzia, 12 pots	0	0		0	0	Myrtles, dozen	6	0	12 0
Dracæna terminalis, doz.	24	0		42	0	Nasturtiums, dozen pots	3	0	4 0
" viridis, dozen ..	12	0		24	0	Palms, in var., each ..	2	6	21 0
Epiphyllum, per dozen ..	0	0		0	0	Pelargoniums, per doz. ..	9	0	18 0
Erica, Cavendishi, per pt.	2	0		3	0	Rhodantho, per dozen ..	4	0	8 0
" various, dozen ..	12	0		18	0	Roses (Fairy), per dozen	8	0	10 0
Euonymus, var., dozen ..	6	0		18	0	" 12 pots	12	0	24 0
Evergreens, in var., dozen	6	0		24	0	Saxifraga pyramidalis,			
Ferns, in variety, dozen ..	4	0		18	0	per dozen	18	0	24 0
Ficus elastica, each ..	1	6		7	0	Spiraea, 12 pots	6	0	9 0
Foliage plants, var., each	2	0		10	0	Stocks, per doz.	4	0	6 0
Fuchsia, per doz.	4	0		9	0	Tropeæolum, various, per			
Geraniums, Ivy, per doz.	3	0		6	0	dozen	3	0	6 0

Bedding Plants in variety, in boxes and pots.



IMPLEMENTS AT THE ROYAL.

ANOTHER of its great annual shows was held by the Royal Agricultural Society of England in the last week of June at

Plymouth, and though altogether a smaller and quieter affair than the great Show of last year at Windsor, it was decidedly a successful one, the entries both of live stock and implements being on the whole good, and the fine weather induced the west country folks to visit the Show ground in large numbers. To most of them the picturesque scenery of the three towns was too familiar to excite attention, but to the visitor from a distance the view from the horse ring was indeed a treat—the Sound, the Breakwater, the wooded heights of Mount Edgcombe, and the open sea in the distance, combined to make a picture of rare beauty, which even those who came to “do” the Show thoroughly were fain to admire.

Of implements the most remarkable in the Show were two among the dairy appliances. The direct butter extractor was first shown by the Aylesbury Dairy Company last year at Windsor, and though imperfect a silver medal was awarded for its evident merits. Since then it has been under constant trial, and so much improved that it is now a perfect and most useful implement. The principle is that of centrifugal force. The drum, kept steadily supplied by milk by a feed regulator making 6000 revolutions per minute, separates most of the milk from the cream, which having the lightest specific gravity collects near the centre, and gradually enters an inner central chamber, in which rotates a spindle at the same rate of speed, finishing the work of separation, and leaving only pure butter globules, which pass out through a spout, the skim milk flowing from the machine by another passage. All the butter is extracted from 150 gallons of milk in an hour, or about as fast as it takes an ordinary separator to extract the cream alone, and the amount of power required is the same. No warming of the milk is required before separation; the butter is absolutely pure, so, too, is the skim milk, and both separated milk and butter are quite free from any fermentative germs.

To Dr. De Laval of Sweden we are indebted for the instantaneous butter maker exhibited by the Dairy Supply Company of Museum Street, London, W.C., who tell us “All dairymen are acquainted with the well-known form of the Laval Steam Turbine Separator. To this separator the new churn is attached. It consists of a cylinder about 12 inches long and 4 inches in diameter within which a dasher revolves at about 3000 revolutions per minute, being driven by a rope belt of the same kind as is used to drive a power separator from the separator spindle. The cream on leaving the separator in the usual way passes over an ingeniously contrived refrigerator of new design, which is admirably calculated to reduce the temperature as low as possible with a very small consumption of cold water; it then enters at one end of the cylinder in the course of its passage through which the cream is churned into butter, and emerges at the other end in a granular form. The cylinder is enclosed in a water casing, so that the temperature is kept very low, the butter is consequently firm, and there is no possibility of its being overchurned. It is very free from butter milk, and therefore keeps well. The churn can be attached to any of the Laval machines.”

Either or both of these machines will be invaluable for large dairies, and especially for dairy factories. They are quick and certain in action, and will enable us to dispense with milk pans altogether, and also to avoid all manipulation of cream. The speedy introduction of such an invention into every dairy large enough to require one is most desirable, and it should mark an era in the dairy farming of this country, and the beginning of a successful competition with importers of dairy produce.

Among motors, Priestman Bros.' oil engines from eleven-horse power down to two-horse power, portable and fixed, were worthy of especial notice, as also was a three-quarter-horse power electric motor by Mr. F. M. Newton for working lathes, pumping water, &c. This last motor is a step onward, and we hope it will lead to the introduction of light portable motors for all farm requirements. The electric motor is the coming power, but it comes very slowly.

In the household and garden it has already been applied to carpet sweepers, shoe-polishers, lawn mowers, and other familiar work. We have the authority of Mr. A. E. Kennelly, Mr. Edison's chief electrician, for saying that it can be applied to every mechanical operation of the household, and it follows that its use may also extend to the farm and workshop.

Of other novel and useful dairy appliances there were hand separators shown—the Danish by the Aylesbury Dairy Company, and the Victoria by Messrs. Freeth & Pocock. The “Arch Albany” butter worker of Messrs. Bradford & Co. is a decided improvement upon the old form. The table is arched so that all moisture pressed out of the butter in the working escapes quickly. The roller is ribbed or fluted spirally in short curves, the grooves being almost at right angles to its axis, which makes more indentations in the butter, and enables any superfluous moisture to escape more readily than was possible with the old style of roller.

WORK ON THE HOME FARM.

Since writing our last note we have had a bad time among the hay. We began mowing with a steadily rising barometer and every sign of fine weather, but the weather soon became unsettled again, and half-made hay could not be got into cocks fast enough to render all safe before heavy rain compelled us to desist and wait for better weather. In such unsettled weather the most strenuous efforts should be made to get the hay into cocks, rather than to begin carting before we have several acres well forward. A few hours' steady rain or a wet day does little harm in comparison with a showery week. It is when the hay has to be left out so long that it becomes black and mouldy that our efforts to save it in a moderately wholesome condition prove vain. As we write our window overlooks a meadow where the hay was just ready for the cocks, when down came a pelting shower, and we had to leave it; a bright Sunday followed, drying it sufficiently to prevent its being quite spoiled by the heavy rain of this the last day of a dripping June.

Clover had to be left in swath for a week. With fair weather now it will be turned with light rakes and left for about two days, when it should be ready for carting. Clover hay requires gentle handling so as not to break the leaf, and it should be carted to the stack while it has still enough sap to produce sweating, heat, and flavour. Yellow Suckling, Sainfoin, and Lucern are all treated in a very similar manner when required for hay.

With so much rain Docks and Thistles can be got up by the roots readily, and whenever this can be done without injury to growing crops not a plant should be overlooked. We give the men and boys full liberty to make overtime at this work, and at Charlock pulling too, where that is possible. The cleaning of fallows and half fallows is much retarded by rain. A fallow over which we walked a few days ago had a lot of couch grass roots alive, and some real hot summer weather will be necessary to destroy them. Fine and warm weather is also now much wanted by the Wheat and Barley as well as other crops, and the land is certainly moist enough for the roots and green crops, and all singling of roots should be well out of hand before the winter Oats are ready for the reaper. They are a fine crop, standing erect with plenty of fine bold grain; so, too, are the spring Oats, but they are not yet sufficiently forward to enable us to form an opinion of the possible yield.

METEOROLOGICAL OBSERVATIONS.

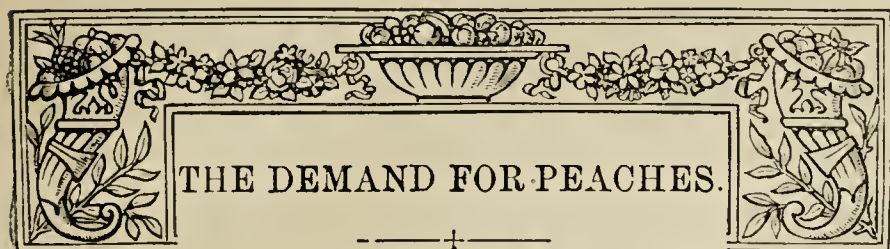
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain	
1890. June and July.		Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature.		
			Dry.	Wet.			Max.	Min.	In sun.		On grass
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.	
Sunday	29	29.907	57.7	52.8	S.W.	58.7	73.1	47.8	117.6	48.1	0.159
Monday	30	29.390	53.5	51.3	E.	58.8	67.2	51.2	107.7	47.9	0.264
Tuesday	1	29.281	59.9	54.0	W.	57.5	66.9	48.9	122.6	47.9	0.118
Wednesday ...	2	29.800	62.1	55.2	N.	57.7	70.4	51.9	110.0	47.8	0.161
Thursday	3	29.778	60.6	54.3	S.W.	58.3	68.5	52.9	114.0	52.8	0.030
Friday	4	29.853	58.4	52.3	S.W.	58.0	65.8	45.1	108.7	42.2	0.691
Saturday	5	29.491	49.7	49.7	N.	57.0	58.1	49.2	80.7	49.8	0.238
		29.643	57.4	52.9		58.0	66.9	49.6	108.8	47.9	1.715

REMARKS.

29th.—Cloudy morning, bright afternoon; heavy shower at 6.45 P.M., then fine again.
30th.—Very wet from 4 A.M. to noon, and occasional showers till 3 P.M., then generally bright.
1st.—Occasional slight sprinkles of rain early, generally bright from 10 A.M. till 0.49 P.M.; then thunder and heavy showers till 2 P.M.; afterwards fine with some sunshine.
2nd.—Fine and generally bright day; cloudy evening rain storm at 10.45 P.M.
3rd.—Cloudy and rainy morning, bright afternoon and evening.
4th.—A little sun early, cloudy afternoon, and occasional drizzle from 4.30 P.M.
5th.—Steady heavy rain from 10 P.M. on the 4th to 2 P.M. on the 5th, then fair for an hour or two, but showers in the evening.
A wet, cold, uncomfortable week: the temperature about that due to the middle of September, and the rainfall equal to the average in the Lake district.—G. J. SYMONS.



IT is questionable if the demand for this delightful fruit during the London season, or from April to July, is by any means fully appreciated by the gardening public generally. It is very well known to some of our enterprising growers of produce for market, and of late there has been a great extension of provision for increasing the supply of Peaches and Nectarines of home growth for meeting the requirements of purchasers in London and other large centres of population.

For a considerable time past large importations of French Peaches have found a ready sale in this country, but it is very certain that the Continent will not be permitted to establish a monopoly in the supply. Our neighbours across the Channel have never been able to compete with British growers in the supply of Peaches of the highest class early in the season. For Peaches and Nectarines equal to those which win first prizes in the best competition there will always be a demand, for occasions are always arising when the best that can be produced is sought for, regardless of cost. But Peaches are wanted for other purposes than supplying sensational dishes at public banquets and brilliant dinner parties. There is a general as well as a special demand, the former being enormously the greater. This is not for superior fruit regardless of price, but for the best that can be obtained by a moderate outlay. French Peaches are not the best by a very long way, but they can be procured at comparatively low prices, and therefore have a large sale. It is in competition with these that home growers find they have an opportunity, and there is every reason to believe that the demand for home-grown Peaches will increase considerably, because of their superior quality, when they can be brought within the means of the great body of consumers.

Peaches and Nectarines of medium size are in great demand in hotels and the better class of restaurants, also for large garden and other parties. A limited number of large fruits do not meet the requirements on such occasions nearly so well as does an unlimited supply of comparatively small examples, and by heavier cropping than is generally the rule in gardens these can be produced at prices that command sales, yet prove remunerative to cultivators. One of the most extraordinary crops of Peaches and Nectarines for market that has come under our notice is at Bexley Heath, grown under glass by Mr. T. Burton, horticultural builder. Instead of glass structures standing empty on his premises, he planted two or three of them with trees a dozen or more years ago. They have yielded so abundantly that there is scarcely a doubt that Peach growing has been more profitable than greenhouse building. One house is a span-roof 200 feet long, about 12 feet wide, and just high enough for the trees, which are trained to wires more than a foot from the glass, to be passed under conveniently. They are not large trees, the distance from each other being 10 or 12 feet, yet so productive are they that 3000 fruits were taken from one of them in thinning, and the crop now ripening is quite remarkable. A "fruit to each square foot of trellis" is the orthodox advice, and for growing fine fruit in private gardens is very good advice, but on many parts of the trees in question it is safe to say there are nearer ten fruits than one occupying the space indicated. Over a large area there is not more than an inch or two of space between the fruits, and in the case of many scarcely room for the insertion

of a finger between them. The wood is small and hard, and the leaves small too. But the fruits swell to a good saleable size. The most remarkable thing is that the crop is such as the trees bear regularly year after year. They have never failed, and a similar crop is expected next year.

In a wider and loftier house, very light, with what may be termed a flat roof, or only with sufficient pitch for carrying off the water satisfactorily, Peach and Nectarine trees were planted along each side of the central path about fifteen years ago, and have been allowed to assume their natural habit. They may be termed bush orchard trees, and are similar to those grown in Peach gardens in the Southern States of America. The crop is enormous; indeed, "sensational" is not an inappropriate descriptive term to apply to it. So heavily laden are the branches that they would break down but for the support afforded by cords attached to them and the roof above. The trees only make moderate growth, as may be expected, and require very little pruning. The crop keeps the growth in subjection, and the marvel is that they endure the strain year by year. If all were ripe at once a bushel could be gathered in five minutes or less. From one of these trees upwards of thirty dozens of Lord Napier Nectarines will be gathered—good saleable fruit of one of the best Nectarines in cultivation. The Downton and Elruge are bearing similar crops, some of the fruits of the latter being $9\frac{3}{4}$ inches in circumference. Twelve hundred dozens of Peaches and Nectarines were sold by Mr. Burton last season, and in all probability the number will be considerably exceeded this year. Between three and four hundred dozens have already been sold, the prices ranging from 25s. a dozen downwards; but the earliest, and consequently the higher-priced, were grown on trees in pots, now removed to the open air.

But though the main object in view is the production of the greatest number of good saleable fruit, large specimens have been grown. The largest was staged among some others at the Colonial Exhibition a few years ago, its weight being 21 ozs., and a dozen were ordered to be sent to America. Several fruits have been gathered weighing 18 ozs. each, and twelve weighed in Covent Garden Market turned the scale at 10½ lbs. Such fruits, however, do not represent the character of the produce under the present high pressure system of cropping. This gives the samples that are most in demand during the London season for the purposes above mentioned, and Mr. Burton says his supply has never been too great for the requirements, but, on the contrary, has often been inadequate. With such crops as his there can be no doubt that the culture must be profitable even at moderate to low prices, and the lower these are the greater is the number of purchasers.

No special borders are made for the trees; the ordinary soil is merely broken up, and manure is applied on the surface. It is a sandy loam full of pebbles and rests on gravel, therefore naturally well drained, and any amount of water and liquid manure can be given without any risk of souring the soil. The trees are dug round periodically, and produce a mass of fibres within a radius of 4 or 5 feet from the stems. It goes without saying that the houses are suitable for the purpose to which they are applied, and are efficiently and quickly ventilated. The heavily cropped trees are worthy of inspection, and this is readily accorded to anyone who is interested in the cultivation of Peaches and Nectarines for home use or market purposes.

We believe Dartford is the nearest station to the Peacheries, but we had a pleasant run of forty minutes by rail from Cannon Street, through some of the Hop gardens and Strawberry and Raspberry fields of Kent to Bexley, for a call on Mr. William Marshall. Always actively engaged in something, this ardent horticulturist was found busy among flags, and—no, not jam pots—but coloured glass receptacles which had been employed the night previously in illuminating his grounds, and making a beautiful wood more beautiful still with the object of attracting visitors and securing half-crowns for a church-building fund. After a glance

at his hardy Ferns, herbaceous plants, Roses, and magnificent Water Lilies Mr. Marshall was ready for a ten-minutes drive to the Peaches. Our thanks are due to him for his good guidance, and we had the great satisfaction of learning of his willingness to accept, if required, the chairmanship of the Gardeners' Orphan Fund, now vacant through the lamented death of Mr. George Deal. In the interests of this Charity, which ought not to suffer through the calamity in question, we venture to express a hope that Mr. Marshall will be unanimously elected by the Committee to the position he is so well qualified to fill.

FLOWER CULTURE FOR PROFIT.

SEMI-DOUBLE ZONAL PELARGONIUMS.

OF late years, or since church decoration has reached such a high pitch, there has been a good demand for flowers bright in colour, as well as pure white, that will last fairly well in a cut state. At most of the principal festivals large quantities of semi-double Pelargoniums, or as many as can be obtained are used, and at other times there is a fairly good local demand for them, both for church decoration and other purposes for which serviceable flowers are required. These Pelargoniums, however, cannot be classed as highly profitable plants, as they have to be kept about all the year round, and require a fair amount of heat during the winter, or when most in demand to have them in flower. At the same time they are bright and effective winter flowering plants, and are very useful for house decoration, in a cut state or otherwise, the surplus flowers not needed for the purpose being marketed.

What the church decorators need are varieties either bright scarlet in colour or pure white, and they are also the best for dinner-table decoration. Mixtures will not be accepted by the former at any price. All must be of one shade of colour, and if not scarlet as near that tint as possible. The favourite variety is F. V. Raspail, and on the whole this bright scarlet form is the best that can be grown extensively for winter and spring flowering. Wonderful is too small, and Bruant, a very sturdy grower, and which produces extra fine trusses of rich scarlet flowers, is scarcely free enough. None of the whites are so free-flowering during the winter as the best of the coloured varieties, but they flower profusely early in March and up to Whitsuntide. La Cygne is perhaps the best in this section, the true *Candidissimum plenum* being also a free flowering variety of compact growth. Heroine is likewise fairly well adapted for forcing, this producing large loose trusses and extra large pips, each with a longer footstalk than often seen, being therefore one of the best for buttonhole bouquets and for "mounting" generally. Of the other shades of colour the best we have yet tried are Guillon Mangilli, rich magenta, and remarkably free; General Billot, which has a suspicious resemblance to the last named; Grand Chancellor Faidherbe, a double Henri Jacoby, Madame Thibaut, purplish pink; Madame Léon Dolby, bluish white, fine truss; Mrs. Arthur Lattey, light pink; and James Vick, deep salmon.

Large, rather than medium sized to small plants, give the best results, and the preference is also given to those comparatively young. Supposing the start has to be made with newly struck plants in the spring, these ought soon to be topped, and if they are already in small pots, this being the simplest way to strike them, a shift into 5-inch pots should be given directly they are breaking afresh. Still keep them growing in gentle heat and well exposed to the full light, stopping the shoots as often as necessary in order to get a good bushy head. From 5-inch pots they ought to be shifted into 8-inch or rather larger sizes, and in which they are to flower. Clean well drained pots should be used, and a fairly rich loamy compost, with plenty of grit added, this being well rammed into the pots. During the summer sunny pits and frames are the best positions for the plants, where they must not be neglected in any way. Too often these plants are set in the open during the summer. This causes them to be sturdy it is true, but thus treated they invariably lose the best of their foliage, and although they flower abundantly when first housed, the trusses are much smaller and not so continuously produced as in the case of those kept under glass. Stopping the plants should cease in July, the aim being to secure a few uncrowded firm shoots, which will branch and flower freely through the winter.

After the Whitsuntide flowers are cut all old plants should be dried off for about a fortnight, and then cut freely back. When breaking afresh turn them out of the pots, reduce the roots considerably, and repot into same sizes as before. Keep in gentle heat till grow-

ing strongly, and before they become drawn transfer to frames or pits. The best of them may well be given a shift, 10-inch pots or rather larger answering well. We only stop any straggling shoots on old plants, and thin out where they are crowded. Tall plants usually flower the most freely, and if these are wanted do not prune back too hard, and also allow a few strong shoots to develop and branch. If cuttings are rooted each spring, stopped once, and shifted into 4-inch or 5-inch pots, these will succeed well on various light shelves and front stages of forcing houses, and be handy for growing into larger specimens the following season.

It is not so much in the preparation of the plants that many private gardeners fail, as in their winter treatment. In some instances there are few or no suitable houses or positions for flowering them; in others they are treated to too much heat and moisture, crowding being also a frequent cause of failure. Light forcing houses, such as are used during the season for growing Melons and Cucumbers, suit these semi-double Pelargoniums well. Such structures could usually be prepared for them late in September or early in October, and there ought to be a thorough clearance of any hotbed material and soil there may be in them, the glass and woodwork washed, and the walls whitewashed. What the plants require and must have is plenty of room and light, accompanied by a dry heat and an airy atmosphere. Set the pots on a bed of rich soil or a moist bottom of any kind, and they will quickly root through into it, causing a rank flowerless growth. Even if this contingency be prevented the moisture arising favours a sappy delicate growth, and few or no trusses are obtained when most wanted. Keep them clear of all other plants, maintain a temperature of about 50° to 55° by night, and 60° to 65° in the daytime; admit air according to the outer weather; keep the floors dry, and the plants dry also. Liquid manure to be given only when they give signs of exhaustion.

At Christmas time the scarlet and white varieties sell readily at from 2s. to 3s. per dozen trusses, little more than half that figure being given for the other shades of colour. From that time to Easter the prices range from 1s. 6d. to 1s. per dozen for all varieties; but at Easter somewhat better prices can safely be asked for the whites, and there is a fairly brisk demand for scarlets. Later on the prices have to drop to 6d. per dozen, and we have frequently been content, or rather had to be, with 4d. per dozen, better sales being made at Whitsuntide, when we get 1s. per dozen for scarlets and whites. All ours are disposed of locally, and at better prices than prevail in the London markets. I must not omit mentioning that it is possible to cut and get rid of hundreds of trusses cut from plants of Guillon Mangilli and F. V. Raspail, growing against sunny conservatory walls.—M. H.

AUTUMN-SOWN ONIONS.

WERE it not for the bulbs obtained from the sowings of Onions made early in the autumn of the previous year, a break in the culinary supply of that wholesome though much abused vegetable would assuredly occur during the months of May, June, and the early part of July. The bulbs of the previous year's growth are then soft and disposed to push into growth, and consequently are of little value for culinary purposes, and those of the current year's raising are not large enough to supplement the supply, hence the necessity for making two sowings of the most approved varieties in July, the first about the end of the third week, and the second ten days later for succession.

Ground which had been trenched and liberally manured for the previous crop, say Peas or Cauliflowers, will be admirably adapted to the requirements of Onions, without any additional dressing of animal manure of any kind being given. As soon as the ground is cleared of the crops indicated dig it a good spit deep, breaking it fine in digging; then tread it over and make it level with a coarse rake, afterwards strewing a little fresh soot over the surface before drawing drills, running north and south, about 1 inch deep, and from 12 to 16 inches asunder. Sow the seed thinly in these, but a little thicker than would be desirable in making the spring sowing, so as to make allowance for drawing young plants from the rows for salading purposes during the autumn, as well as for any mishaps that may occur in the winter months. Return the soil to the drills, and then tread and rake in the same direction as the drills, so as to present a firm and smooth surface when finished.

As soon as the young plants appear stir the soil well between the rows with a Dutch hoe, and remove any weeds that may appear. The thinning and weeding are best done during dull showery weather. Three inches from plant to plant in the rows will be ample space for the winter months, drawing every alternate plant

early in spring for transplanting, if desired to extend the crop, in rows from 12 to 16 inches apart, and at from 6 to 12 inches from plant to plant in the rows. The latter distance should be given to plants intended for exhibition.

The only after attention necessary until the bulbs have completed their growth is to keep them free from weeds and the soil stirred between the rows occasionally with the Dutch hoe, this as much with a view to accelerate growth in the plants as to destroy seedling weeds. Guano water at the rate of a 3-inch flowerpotful of guano to 6 gallons of water, applied at the roots during the months of April and May, will tend to the production of large fine bulbs, and an occasional application of soot water at the roots will, in addition to stimulating growth, arrest, if not prevent, the attacks of the grub or Onion maggot, which frequently work great havoc among the bulbs. The best varieties to grow are the Queen, only a few rows for very early use; Early White Naples, three parts of the sowing made should consist of this excellent Onion; Giant Zittau, and Sutton's Giant Blood Red Rocca. — H. W. WARD, Longford Castle, Salisbury.

THE BRITISH FRUIT GROWERS' ASSOCIATION. STRAWBERRY CONFERENCE.

(Continued from page 22.)

STRAWBERRIES FOR MARKET.

By MR. G. BUNYARD.

THIS crop is most extensively grown for market in the county of Kent, and I propose in the first place to give a *résumé* of the usual way they are cultivated there and then to detail the varieties. Soil and situation will come first.

The best soil is a deep stiff loam rather inclined to clay than a lighter sandy mixture, and by preference such as does not feel the summer drought to a great degree, but avoiding the chalky uplands and the sandy drifts. Strawberries seem to flourish on all other soils provided deep and clean culture is carried out and a heavy manuring is applied before the plants are put in. I have seen them grand in cool clay bottoms and in the higher flinty and pebbly soils which are common in the Crays district near Swanley.

Situation is unimportant, all that is requisite is an open space free from trees, and the larger the field the better, the aim being to reduce manual by substituting horse labour in hoeing, and such open fields are more readily kept clean than where they are bounded by woods and intersected with hedges.

It is important to have the land thoroughly clean at first, and in order to do this a crop such as Potatoes, Cauliflowers, Peas or Beans may be taken the previous years, when the ground can be kept quite free from weeds, and be frequently stirred and laid up for the action of sun, wind, and frost to purify and mellow it.

Preparation of the Soil.—This must be deeply cultivated; large fields may be ploughed by steam, and if both ways so much the better. In smaller ones the land may be deeply dug or trenched, being previously manured with 35 to 50 tons of manure per acre, and harrowed down two or three ways about a fortnight before planting. The cost of manure, carting, spreading, ploughing, coal, &c., will be about £15 to £20 per acre, or if dug £25 to £30.

Planting.—This is generally done in March, when all danger from the runners being lifted by frost is passed, and the plants are about making their rootlets, when they strike at once and soon develop fine healthy foliage; an ingenious marker with spokes on a wheel which strike the land at regular distances is used, and the planters then follow with the dibble and plant by the acre. The distance preferred in Kent is 32 inches between the rows, the plants being 16 inches apart. Care must be taken that the crowns are not buried beneath the soil, and they should be set as firmly as possible.

Summer Cultivation.—The first year consists in removing the runners about four times with a sharp knife, horse-hoeing to keep down the weeds, and hand-hoeing between the plants.

Autumn Cultivation is completed by earthing-up the plants with a mould board plough to protect the foliage, and to allow the water to drain away from the crowns; the plough is set as shallow as possible.

Cultivation in Spring.—The field will require horse-hoeing to level down the plough ridges in March or April when the land is dry, and after a hand-hoeing when the plants are in bloom; the fields are littered with barley straw, requiring about 2½ to 3 loads per acre (about 1½ ton) preparatory to picking.

Cultivation First Year of Cropping.—As soon as the crop is cleaned the straw is raked off, the runners and old dead foliage having been removed by a bagging hook; the horse hoe is used again, and every encouragement given to the plants to develop foliage and make plump crowns for the second season's crop, which is generally the best. The straw is used in the cattle yards, and thus pays for cost of removal.

Expenses per Acre.—Estimated roughly the cost per acre up to the time of picking may be set at nearly £50 per acre—i.e., £25 per year first and second years per acre; the expenses for the rest of the series of years the crop is on the land being very much less. If five years an average of £15 to £20 per acre.

Duration of Crop.—About five years is considered the utmost that a profitable crop can be expected, as when the fruit becomes small the market value will not be remunerative.

Average Yield.—Two tons per acre is considered a fair yield, much more is occasionally taken, and rarely less.

Price.—This varies year by year according to the weather, a dry warm time stimulating the consumption; from £16 to £28 per ton will be a fair average. The cost of picking and packing is about 4d. to 6d. for 12 lbs., this is done by women, boys, and girls, and they are paid by the dozen or gross in punnets, and by the peck later in the season, this is included in the expenses quoted per acre.

The usual plan is to place a shed at a convenient spot for the vans to load and for the pickers to assemble, and as each set of punnets or peck basket is brought in a tin tally is given to the picker, which is turned into cash as required. Some large growers dress the Strawberry land three times a year, using soot or artificial manure, and an autumn and spring dose of farmyard dung. After the third year a mulching of manure, about 15 to 20 tons per acre, must be placed round the plants to assist them, and this might be annually repeated, as the Strawberry lands are so well cared for that one or two crops can be taken after they are ploughed up without extra manure.

The uses of Strawberries are well known. As a dessert fruit they take the first place, and as a preserve are very rich. The custom is to send all the earlier pickings for table use in punnets, and to "Plum" the rest for the jam makers when they are stripped off the stalks. As regards the consumption it increases year by year in a remarkable degree, and when the price gets low they are eagerly purchased by the working classes. In 1888 the crop was very large, and one retailer in Maidstone sold 1200 lbs. over the counter on a Saturday, when formerly you could scarcely buy a basket in the town at all; truly the luxuries of one generation are the necessities of the next.

It may be asked, What are the profits of Strawberry growing? The growers are naturally reticent in giving these particulars, but I gather from various sources that from £20 to £40 per acre may be expected where the plantations are well done and cared for, and put on the market in good condition. None but the best make top prices, and care to the little details of culture will bring an adequate reward, and at times an exceptional profit. My notes give 6000 pecks of 12 lbs. each as the largest picking at the Crays on one farm alone, while another grower is said to have 2000 acres, and picked 360 tons in one week.

As Strawberries are very perishable the plantations should be near a railway to avoid as far as possible the bruising in transit. In the great Strawberry districts picking commences as soon as daylight allows, and the earliest pickings go in special vans for Manchester, Birmingham, and the large centres of consumption, later pickings being in time for the London markets. Growers in other parts deliver to the towns daily in spring vans. This enables to put them in the market in a fresh condition. The bottom of the van should have 1 foot of straw in it to prevent jolting, and a neat light cover should be placed over them to exclude the sun and dust.

As regards sorts, in market work only those that carry well can be large grown, and in this respect none approach Sir Joseph Paxton, its fine rich colour, firm flesh, and glossy skin make it taking in appearance. It is as hardy as any kind and most productive. For an earlier crop Alice Maud or Vicomtesse H. de Thury are used in some grounds, and Sir Charles Napier for a main crop, while Elton Pine and Eleanor are favoured for a late crop. Laxton's Noble will be very much grown in a few years, its large size and freedom of crop and vigorous growth are what the growers desire. We picked fruit nearly an ounce in weight on June 13th, and no other kind can compare with it for earliness and bountiful crop. This is the early market Strawberry of the future.

The practice in other counties is slightly different; for example, in Scotland, where they are extensively grown about Aberdeen, the small early kinds, Black Prince and King of Earlies, furnish the first gatherings, and Eliza, President, and British Queen are grown, and as the rainfall there is considerable the beds will last in good order as long as eight years.

British Queen is well grown near Sandwich where the cool, deep, and rather heavy loam suits them; but, as a rule, this variety is not a paying crop as it bears sparsely, and the beds must be renewed every other year.

For preserving, Mr. Beach, the contractor for Lord Sudeley's extensive fruit farms in Gloucestershire, prefers the old Carolina Pine to any other for jam purposes; the colour is bright, and it makes a delicious whole fruit preserve. In the same district Sir Charles Napier, Stirling Castle Pine are preferred with Sir J. Paxton for punnet sale.

In the Cornish system the planting distance is only 20 by 14 inches for small growing kinds and 20 by 16 for others. Here again by deep cultivation and heavy manuring beds are sometimes retained as long as fifteen years. Possibly the rainfall keeps the plants in health and vigour, while the proximity to the sea may be advantageous. One farmer there picks an average of two tons per day, and as all are marketed with baskets this represents an enormous picking.

In conclusion I would venture to suggest a trial of more varieties, such as James Veitch for earlies, and Waterloo, Laxton's Jubilee, and Aberdeen Late for late sorts. Waterloo is of very dark colour (quite a Mulberry) but its fine appearance would in time command a sale. A grower says it sells for double the price of others at the same season. Jubilee is an enormous cropper. A plot of land should be set aside, and two or three new or fresh varieties tried every year, as both early and late Strawberries are much appreciated.

Other promising varieties are Laxton's Latest of All, a grand berry of the richest flavour; Prince Teck, an improved Paxton; and Aromatic, a finely coloured midseason fruit. The American varieties have not yet been of much service, or equal to existing sorts.

For preserving enormous crops are produced by Newton Seedling, a very strong grower. John Powell (Kitley's Goliath) and the old Elton Pine are also useful for this purpose. Crescent Seedling, from America, is the earliest, and the fruit could probably be gathered at two pickings, as it produces a very large crop of small berries, and will prove invaluable for jam to start the factory. King of the Earlies would also make a fine whole fruit jam, and is very productive. I am of opinion that as far as culture is concerned we have reached the best possible, and the only thing I object to in our Kent field system is the late hoeing which is often given.

If the land is thoroughly cleaned and pulverised, by the time the flower trusses show and before they open it would be preferable to finish hoeing at this stage, and not delay the work until the flower is out; but the weather is a factor in all operations, and is often wet when such work would otherwise be done. The object of the final hoeing is to destroy seed weeds and to prevent evaporation. Great care is exercised in laying on the straw or the annual mulching, in May the dung is sometimes carried on by rough hand barrows to prevent the closing of the soil, as happens when wheelbarrows are used. If short stuff is at hand baskets are used. To sum up the culture in a few words—deep cultivation, heavy manuring, clean culture, and care in sorting the fruit appear to be essentials.

We appear to have reached the best market Strawberry in Sir J. Paxton, but those who have time and patience should try hybridisation, taking this as one parent. In Prince Teck we have a reputed advance on this old favourite, and earlier and later Strawberries that have the same characters as Sir J. Paxton would be valuable additions to market varieties. At this date (June 27th) several promising varieties are under trial, but must be proved before we can admit them in a list of market kinds.

SEEDLING STRAWBERRIES.

BY MR. THOMAS LAXTON.

WHEN I was invited to read a paper on "Seedling Strawberries" at this Conference, I felt that there might be listeners who would inquire of themselves why seedling Strawberries should require to be separately treated, when the history and cultivation of the fruit is expounded by the able fruitists and writers who have kindly taken those subjects in hand; but looking at our special and most popular summer fruit as almost of an annual character, as it gives its produce from seed more rapidly than any other fruit with which I am acquainted, and to the enormous demand to suit the various tastes and requirements of consumers, I do not hesitate to lay before you a few of the simple facts and slight experiences gathered by me in a period of thirty-two years, during which I have, mostly at intervals of three or four years, continued to raise and work out a batch of seedlings, chiefly by cross-fertilisation. The annual character of the Alpine Strawberries, so much appreciated by our French neighbours, is well known, as they are ordinarily and best treated as such, coming fairly true from seed, and the produce generally finer than from runner plants. Our so-called English Strawberries, which probably contain an admixture of the blood of all the edible species, may be treated in a similar manner, and may be more quickly fruited from seed than, I believe, is generally understood. As these are now cultivated in most temperate and semi-tropical climates, and as almost every soil and situation has a peculiarity for some particular variety or varieties, it becomes necessary to provide sorts suitable for these varied climes and localities. In North America, I believe, this has been largely and systematically carried out, with the result that a more vigorous race than we have in most of our English and continental sorts has been secured, for if there be a failing in our many good quality Strawberries it is chiefly that of weak constitution. The health and vigour of most of the American varieties leads me to look to these as suitable parents to be introduced into our home stud book, for although the American sorts are not all or generally suitable for our moister climate, especially in a wet season, still their great fertility, hardiness, and vigour, combined with good size of fruit, has seemed to me just what we want on this side of the water to keep up the health standard and constitution of the western European varieties, for our cousins looking at the matter in a practical and profitable way have excelled us in the production of hardy, prolific, and large fruited varieties adapted for market and field culture. By the introduction of the American Strawberry blood we have an alliance of two distinctly acclimatised races, and I cannot but think that such an alliance is equally advantageous for our artificially produced and cultivated fruits, as it has proved for the over-civilised human race. Now following the lines adopted in America in raising seedling Strawberries, the objects which it has appeared to me that we ought to seek are:—

- 1, Constitution and moderate vigour.
- 2, Fertility.
- 3, Solidity and external firmness to adapt the fruit for transit.
- 4, Flavour and quality.
- 5, Size and appearance.

The latter points many market growers will hold as constituting the blue blood of the Strawberry, while, on the other hand, private gardeners will put quality in the foreground, as Strawberries are grown to

be eaten as well as to form captivating works of art. This adds to the necessity for providing a sufficient number and variety of sorts as may be required for the particular purpose. It has been my folly to seek the philosopher's stone, and to blend all the desired qualities in one. I need hardly say that this happy goal has not yet been attained, and the pleasure may yet be looked forward to by workers in the interesting field of seedling-Strawberry raising. But to be practical, what is most wanted now are early, main crop, and late sorts having good-sized high-flavoured fruits with a firm exterior, the colour of a bright glossy scarlet and lasting. The conical or heart-shaped form may perhaps find most favour, but the shape should be regular. The plant hardy, moderately vigorous and sturdy, and fairly productive of runners. A stout footstalk carrying about ten or twelve even and regular-sized fruits, free of but not too far from the ground. The fruits of good and distinct flavours, it not being necessary that all sorts should assimilate in this respect, variety and novelty being desirable to suit various tastes. And, lastly, if these qualities can be adapted to fruits suitable also for forcing, a material gain will be secured.

How these Ends may be Attained.—1, By sowing seed from naturally fertilised, large, and well shaped fruits approximating to the above standard or objects desired. Perhaps the varieties Sir Jos. Paxton, Noble, or Auguste Nicaise may supply what is wanted in the earlier sorts, and British Queen, Commander, President, Dr. Hogg, Loxford Hall, Waterloo, Latest of All, or Eleanor similar advantages for the improvement of the main and late sorts. 2, By artificially intercrossing the best English and foreign varieties.

Modes of Operation.—The seed may either be sown as soon as the fruit is thoroughly ripened, when it may be broken up and the pulp or flesh well washed out and separated from the seed through a fine sieve or piece of muslin, dried, and at once sown in a box of rather light soil, kept moist and in a shady situation until vegetation takes place, which will probably occur in two or three weeks. As soon as the plants are large enough to handle they may be pricked out into boxes or potted off at once into 72's and afterwards repotted from time to time or planted out as may be required, or the fruits may be dried in a sunny place and retained until the early spring following, when the seed may be rubbed or picked out and sown and treated as above.

The former method has the advantage of gaining time, and from it I have been able to obtain fruit from some of the seedlings in about fourteen months from sowing the seed. The latter mode avoids the preservation of and carrying through the winter a number of small plants and the attendant risk of loss from slugs and insects.

I prefer and adopt the former when possible, and time is important, and this I find was the mode preferred by the late Dr. Roden, well known as a successful raiser and improver of the Strawberry. When the seedling plants are strong enough I usually plant them out in rows about 1 foot to 1 foot 3 inches apart according to size and vigour, giving 2 feet 6 inches between the rows. This affords a fair opportunity for testing and securing a few runners during the first two years; for although some of the plants may flower and fruit the year following that of sowing the seed many will not, however, fruit, nor can any be satisfactorily put on further probation until the second year. Where convenient it is a good plan to put out the seedlings by the side of an open walk or path, facing south if possible, as there the plants get ample light and air and can be readily tended.

How and What to Intercross.—Where it is desired to intercross two distinct varieties or species the parents should be both healthy and vigorous plants, but not too vigorous, and it will be well for security and convenience that the intended seed-bearing plant should be grown in a pot. The anthers must be removed from the flower to be operated upon with a pair of small sharp-pointed scissors the day preceding the opening and full development, and early the following morning pollen of the sort required as the male parent should be applied to the pistil of the intended seed-bearing flower directly from the pollen-bearing flower, and as there is a possibility of the organs not being sufficiently ripe or developed it may be advisable to repeat the operation a few hours later; but the first access of pollen will usually suffice. When it is clear that fertilisation has taken place I pinch off all flowers and fruit not required, so as to strengthen those intended for seed. There is also an advantage in potting the plants to be worked upon, as they may be advanced or retarded for use with varieties flowering earlier or later in the open, and the operations can be more safely conducted under cover, the protection of gauze, however, being unnecessary for a many-pistilled flower like that of the Strawberry. It will be wise not to over-fertilise or apply too much pollen, as when many seeds are obtained from a fruit the whole are generally weaker than when a few well-developed seeds are secured. I have an impression also that an excess of alien pollen tends in the Strawberry to a predominance of the characters of the pollen-bearing male parent.

As to Forthcoming Results, it may be anticipated that as the cultivated Strawberry is a cross-bred fruit, there will be considerable variety as well as some wide breaks in the progeny from intercrossing, but generally the offspring will show characters intermediate between the parents, and with perseverance it will be possible to gain the end sought. Having practised Strawberry crossing so long, however, it is somewhat discouraging to know that Noble, probably the most remarkable break in Strawberries of recent years in this country, was obtained without artistic intervention. I surmise there are some who will like to know its actual origin—such is easily told. In 1884 I grew and sowed the seed from a large and handsome fruit of Forman's Excelsior (a fine and good shaped, firm-fleshed Strawberry on light soils). From this sowing

I obtained only five plants, one of which proved bolder than the rest, and subsequently became "Ennobled"—the remainder were not acquisitions. Now, considering that I have during the past thirty-two years from my own work of cross-breeding raised at least 10,000 seedling Strawberries, and out of these only nine have as yet been sent forth to the world, although all have had to be tried, and many after being largely cultivated for years have had ultimately to be abandoned, and that out of a small batch of five from natural fertilisation there should be one distinct gain, I feel that the work of a cross-breeder who can only point to such results is not altogether satisfactory, nor, I may feelingly add, profitable. Although Noble was only from natural, or insect, or wind, fertilisation, I am able, with some confidence, to indicate its breed, and that it contains American blood, as the fruit from which it was grown was taken from a row of Forman's Excelsior grown contiguous to one of Sharpless Seedling, a large, early, and vigorous sort, and if the foliage, habit, fruit, and periods of maturity of these two varieties be examined and considered, it will appear tolerably plain that Noble has a good deal of each of these varieties in it, and that the advantages of American blood have been secured without the agency of man. The influence and weight of Noble will, however, doubtless soon be apparent in forthcoming varieties, for by intercrossing it with all the best varieties, and reversing the crosses in most cases a large number of seedlings have been obtained and are on trial. In carrying out my own work I have found that the seed of Noble is lighter, and does not vegetate so freely as that of the varieties crossed with its pollen, and it may be that to this imperfection of seed the fertility of Noble in quantity and size of fruit may be owing. I have also introduced with success the blood of other American seedlings into my crosses, and I am a believer that in this introduction of new blood there is greater probability of further advancing our own home race of Strawberries, a field in which there is yet ample scope for progress.

THE DISCUSSION.

IN the course of the discussion which followed a number of cultivators expressed their opinion upon the subjects dealt with in the papers read. The principal points raised are, however, given in the subjoined condensed notes:—

Mr. Albert Bath said he was unable to agree with Mr. Bunyard's estimate of the profits of Strawberry culture, and considered that £40 per acre was too high. He considered that in growing Strawberries for market rather more space should be allowed between the plants in the rows than was stated by Mr. Bunyard, and, according to his experience, the largest crop was obtained by having the plants sixteen inches apart.

Mr. Cannell expressed his opinion that both Mr. Bunyard and Mr. Bath were referring to the distances required by plants grown in ploughed land. When so grown the space was no doubt sufficient, but when the land was deeply stirred and liberally manured, they required even more room than stated by Mr. Bath. He was very glad indeed that the British Fruit Growers' Association had made arrangements for a conference on Strawberries, for their culture had now become an industry of immense importance, and more especially was this the case in the county of Kent, where there were now between 2000 and 3000 acres devoted to Strawberries, giving during the picking season employment to a whole army of men, women, and children. As showing in some degree the extent of the crop, he would mention that when at Swanley Junction in the morning he saw no less than fifteen trucks waiting to be loaded and dispatched in the course of the day to the large towns in the midland and northern counties. With reference to the soil, he agreed with Mr. Wright as to Strawberries flourishing on light soils, as proved by the abundant crops produced on the chalk in Kent.

Mr. J. Peed, in referring to the comparative merits of varieties, said that he regarded Laxton's Noble as a great gain. It was one of the most handsome Strawberries he knew; and as regards its size, he would mention that a few days previously he had gathered nine fruits, one of which turned the scale at $1\frac{1}{2}$ oz., and the remainder weighed 12 ozs., or an average of $1\frac{1}{2}$ oz.

Mr. Cheal, in proposing a vote of thanks to the readers of the papers, said the association had good cause to congratulate itself on having been able to obtain the co-operation of such high authorities on the respective subjects as the gentlemen who had contributed the papers.

Mr. Hammond seconded the motion, and said that he had in Essex tried for several years to grow the British Queen, but with very little success. Eventually he obtained runners of that variety from a neighbour who was very successful in its cultivation, and since had obtained excellent crops.

The motion having been unanimously adopted, the proceedings terminated with the customary vote of thanks to the Chairman.

LEDUM PALUSTRE.

As dwarf evergreen free-flowering shrubs the Ledums are worth a place wherever peat-loving plants are grown and an American garden is provided. The Labrador Tea, *L. latifolium*, is a stronger growing shrub with broader leaves than the Marsh Ledum or Wild Rosemary, *L. palustre* (fig. 8), but the latter produces its globular heads of white flowers very freely. It will grow in damp and shaded situations where comparatively few shrubs succeed, and flowers about the same time as the hardy deciduous Azaleas. Both

the species named are from North America, and were introduced in 1762 and 1763, but there is another also occasionally named *L. canadense*, which is of dwarfer habit, and did not reach this country till 1812.

The leaves of *L. palustre* have a balsamic odour, an aromatic bitter taste, and contain, among other ingredients, volatile oil and tannin. They have been sometimes used to allay irritation in whooping cough and various cutaneous diseases. In complaints of the skin they are used both externally and internally in the form of decoction. When placed among clothes they are said to prevent the attack of moths. In Germany they are sometimes substituted for hops in the preparation of beer. An oil is obtained from the



FIG. 8.—LEDUM PALUSTRE.

leaves by distillation, which is yellow, with an intoxicating odour and a burning aromatic taste. The leaves of *L. latifolium* have an agreeable odour and taste, are esteemed pectoral and tonic, and, from being used as a substitute for tea, the plant has been called Labrador Tea. The flowers afford a great quantity of honey to the bees. The leaves of both these species infused in beer render it very heady, and cause headache, nausea, and even delirium.

TUBEROUS BEGONIAS.

It has been satisfactorily proved during the past few years that Tuberous Begonias must take rank amongst the most useful flowering plants cultivated for purposes of conservatory and garden decoration. The plants have been tested under all conditions, and in good and bad seasons alike they have maintained their characters admirably. In pots or baskets under glass their merits are great—their flowers are large, are freely produced, and present a range of

brilliant colours, from the richest crimsons and brightest scarlets, through all the gradations of rose and pink to white on the one hand, or through orange, buff, salmon, yellow, and cream to white on the other. The simple but finely proportioned forms of the single varieties afford pleasure to some admirers, while the more solid and imposing double varieties equally satisfy others. Then, too, out of doors Tuberous Begonias have been tried as bed and border plants from the south of England to far up into Scotland, and good results have been secured in the majority of cases, varying slightly with soil and situation. They have not and will not entirely supersede Zonal Pelargoniums for bedding, but they have been found to be a valuable addition, and in some seasons a useful substitute.

Much of the greater favour extended to Tuberous Begonias is due to the improvement effected by careful crossing and selection, and Messrs. J. Laing & Sons of Forest Hill have had so large a share in this work that they may fairly claim a considerable portion of the credit. At the Stanstead Park Nurseries during a number of years close attention has been paid to these plants, and the results accomplished form a portion of the floricultural history of the past decade. Mr. John Laing never rests satisfied with moderate successes, and so he has pushed on his Begonia improvement until they have reached their present astonishing stage. The houses at the nursery named now contain an assemblage of single and double varieties that may be said to furnish a "blaze of colour," softened by the more delicate hues into a brilliantly beautiful floral display. The varieties are innumerable. Many are seedlings flowering for the first time, and not yet honoured with a title. Others are established favourites of recent years, some already having quite a formidable record of certificates awarded by judges and committees. All are good, for inferior seedlings are not tolerated, and numbers that a few years ago would have been prized as additions to the lists are now cast aside as useless.

Then outside there are twenty-three long beds, each with eight rows of seedling plants, and not far short of 1000 in every row. These are arranged in colours, two beds of each, and it is astonishing how true the plants are coming. In another week or two, with fine weather, these beds will show what can be done with the Tuberous Begonia out of doors, even in such a season as the present one. Altogether something like 200,000 seedlings are grown this year, all of which are raised early in January, and yet we find sturdy specimens bearing substantial flowers, clean, pure and bright.—H. H. M.



THE RAINS AND THE ROSES.

WE have showers every day, but the Roses, in some places later than usual, look wonderfully well. As a rule little wood has been made; the root action must have been ample. The foliage is broad and clean, and the blooms, if in some cases rather small, are brilliant in colour and beautiful in finish. White Roses have not gummed or stuck. Souvenir de Malmaison is superb, so also Merveille de Lyon, Gloire Lyonnaise, Madame Lacharme, Perle des Jardins. Jeanne d'Arc has not been happy, but as I said, on the whole Roses have done and are doing well, Teas included.—A. M. B., *Mid-Lincoln*.

ROSE SHOWS.

IPSWICH.—JULY 8TH.

IPSWICH possesses an ideal site for a Rose Show in the beautiful private grounds of Christchurch Park, which are always available for this and similar purposes. Many a good show has been held in a meadow from which a crop of hay has been taken, but it is often terribly wet under foot in such places; and a really fine park, with a large extent of short grass, grand old trees, ornamental water, &c., situated quite in the midst of a large town, is admirably suited to all the requirements of a flower show and summer fête; and if it does rain, as it unhappily did on this occasion, and generally does, the people of the town live so close at hand that half an hour's sun soon brings a throng to the gates.

Roses were in most cases, as might be expected, below the average standard of excellence. In the open classes Mr. B. R. Cant of Colchester was first for thirty-six, having Mrs. John Laing, A. K. Williams, and S. M. Rodocanachi among his best. Messrs. Prior of Colchester were second, some way behind, and no other exhibitor was forthcoming. For twelve trebles Mr. Cant was first again, Rev. A. Foster-Melliar of Sproughton being second, with much larger flowers, but coarse, rough, and too crowded, showing, however, fine triplets of Duchesse de Morny and Le Havre. Messrs. Prior again occupied the third place. For

twelve Teas (open) Rev. H. T. Frere of Burston Rectory, Diss, was first, having a fair specimen of The Bride; Mr. Cant second, and Messrs. Prior third. In the class for amateurs there were only two who showed thirty-six, and Rev. A. Foster-Melliar took the lead with a really fine stand, in which it would have been difficult to find a bad bloom. They were large, fresh, and of good substance, among the best being Prince Arthur, Marie Baumann, and A. K. Williams. Rev. H. A. Berners of Harkstead was second with smaller specimens. There were only three stands in the class for twenty-four, Rev. Frere leading, showing Prince Arthur and Lady Helen Stewart well. Mr. Powell of Drinkstone Park was second, and Rev. F. Page Roberts of Scole a good third. Five stands of twelve were exhibited, Rev. A. Foster-Melliar being placed first, having Prince Arthur fine again, as it has been everywhere lately, and a smooth and even Madame Eugène Verdier. Mr. Berners was second, and Rev. Page Roberts third. There was a good competition in the class for twelve Teas among the clerical Tea Rose fanciers. Rev. Page Roberts was first, having a good example (for the season) of Madame de Watteville; Rev. Foster-Melliar second, with a stout young Francisca Kruger in the corner, and Rev. H. Berners third, having Comtesse de Nadaillac and Catherine Mermet in good condition. For six Roses of one sort Rev. Foster-Melliar was first with Ulrich Brunner, large but rather rough; Mr. Powell second with Camille Bernardin, and Rev. Berners third with Her Majesty, very fine but quite unopened buds. Madame Gabriel Luizet, Souvenir d'un Ami, and Ulrich Brunner were also shown in unnoticed stands. In the class for six Roses Mr. Orpen of Colchester was first, Mr. J. E. Ransom second, and Mr. E. R. Turner third. For six Teas Mr. Orpen was first with pretty good samples, and Rev. H. Gall of Hitchin third.

A new Rose, Miss Rosa Roberts, was shown by Miss Roberts, Rose Hill, Ipswich. The colour is not attractive, being a dull mottled pink, and the blooms were small and badly shown, but one or two of them seemed to have some shape and substance, and if cultivated in a superior manner it might prove worthy of propagation.

The evening turned out fine, and some thousands paid for admission at the gates, rejoicing the heart of Rev. H. Berners, the Hon. Secretary.

DISS.—JULY 9TH.

THIS plucky and flourishing little Society held its Rose Show on the Lawn, by kind permission of F. Taylor, Esq., M.P. The situation is very handy, and well within the limits of the town, but it had been a hayfield, the grass was long, and, as there was a good deal of rain, the ground was very wet and locomotion between the tents unpleasant. Roses were naturally below the average, but most of the usual exhibitors turned up and made a creditable display. There were only two competitors in the open class for thirty-six Roses—Mr. B. R. Cant, of Colchester, and Rev. A. Foster-Melliar, of Sproughton. The Judges had some difficulty in coming to a decision, and called for further assistance, the result being that the amateur was awarded the first prize. A. K. Williams was the best bloom in his stand, while Mr. Cant, who followed very closely, had fine specimens of Benoit Comte and Mrs. John Laing. For the amateur classes Rev. Foster-Melliar was first for twenty-four, a very fine bloom of Le Havre gaining him the silver medal for best H.P. Rev. H. T. Frere was second and Rev. F. Page Roberts third. Rev. A. Foster-Melliar was again first in twelves, having fine specimens of Marie Baumann and A. K. Williams, Rev. Page Roberts second, and Mr. Frere third, with Horace Vernet and A. K. Williams in good condition. In the local class for twelve Rev. H. T. Farquharson of Gissing was first, Mr. W. Burrows second, and Mr. A. Bobley third. Liberal prizes were offered in the class for twelve Teas, Mr. Page Roberts taking the first prize, having a small but beautiful sample of The Bride, Rev. A. Foster-Melliar second, and Rev. Frere third. The silver medal for the best Tea was awarded to Francisca Kruger in Rev. A. Foster-Melliar's box, the same bloom having already been shown at Ipswich. He thus twice within a week took the medal with a Tea Rose bloom which had already been exhibited at a previous show. In the class for six Roses, for those employing no regular gardener, Mr. C. S. Alger was first, Mr. W. Bunn of Harleston second, and Mr. Burrows third.

A handsome prize of £3 was offered in the open class for thirty-six bunches of hardy perennials. Messrs. G. Paul & Son of Cheshunt had no difficulty in winning this, and their stand excited great admiration, but there was one little gem in the front row which drew exclamations of delight from all. This was a small bunch of Calochorti, or Californian Tulips, and one of these, venustus, was a most lovely flower, a small pure white vase or cup of most elegant shape, with a sort of peacock's-feather eye of all sorts of colours most harmoniously blended, at the base of each petal, forming the cup of the flower. This charming genus does not seem to be well known, but a good many will not forget the bloom they saw at Diss. Indeed, one enthusiastic gentleman said he must have it, for he could not live without it.

The rain came down pitilessly in the afternoon, making terrible weather for cutting thirty-six three days in succession, and the number of visitors was small, causing some anxiety to the excellent Hon. Secretary, Rev. Page Roberts, who is sure to make a thing go off well if it is to be done.

WOODBIDGE.—JULY 10TH.

IN no place in East Anglia is the Horticultural Society more enthusiastically supported by the people than in the small town of Woodbridge. All places of business are closed at an early hour, and the triumphal arches and general display of bunting, together with the

merry peals from the church bells, would make a casual stranger think that the Queen of the realm was coming, instead of only the queen of flowers. The Abbey grounds, which have always been available by the kind permission of R. J. Carthew, Esq., are well situated, and well suited to the occasion. Other societies may well learn of Woodbridge in general enthusiasm and unanimity, and if the Committee will not be above learning a little from other shows, and moving with the times a little more in the arrangement of the prize list now that it is affiliated to the National Rose Society, the Show will certainly improve, and perhaps attract high-class Rose growers from a distance. A due regard for not clashing with other, especially East Anglian shows, is desirable. Larger classes among Roses, with more twenty-fours and trebles and less sixes, would cover the tables better. Higher prizes should be given, even if the entry fee had to be raised; and punctuality should be enforced in the tents, as well as italicised in the rules. The Society has nobly passed through a financial crisis, and most wellwishers would suggest that a greater liberality in objects of special interest would be found to answer, even if the excessive number of general classes were curtailed. There were some present who would gladly have fastened their eyes on the *Calochortus venustus* exhibited by Mr. G. Paul at Diss the day before, and learnt something of its "manners and customs" from his representative; but there is a serious difference in the attraction afforded by 15s. and £3, and *Calochortus* had fled to more liberal climes. These criticisms are offered in a friendly spirit, and with a hope that Woodbridge Horticultural Society may flourish and prosper. It is a tradition in East Anglia that Ipswich Rose Show is always wet, and Woodbridge always fine. It was more true this year than a great many weather forecasts. There had not been a day without rain for a fortnight, and it poured the next morning; but the clerk of the weather had, as usual, set apart an extra fine day for Woodbridge, and the attendance was large, and the receipts above the record.

In the open Rose classes, Rev. A. Foster-Melliar of Sproughton took all the four first prizes. For thirty-six, Messrs. D. Prior & Son of Colchester were second, having the silver medal for best Rose in open classes for a pretty good A. K. Williams. Mr. J. Woods of Woodbridge was third with inferior blooms. For twelve Teas, Messrs. Prior were second, and Rev. H. A. Berners of Harkstead third, the blooms of all being of course indifferent in such ungenial weather. For six Teas Mr. Woods was second, and Messrs. Prior third. For six trebles of H.P.'s Rev. H. A. Berners was second, and Messrs. Prior third. In the amateur classes, Rev. Foster-Melliar was first in twelve, again getting the silver medal for *Le Havre* (not the same bloom shown at Diss) for the best Rose in the amateur classes. Mr. Berners was a very close second indeed, and Rev. H. T. Frere of Burston third. For six H.P.'s, Mr. Orpen of Colchester was first, Mr. F. Gassett second, and Mr. C. E. Green third. For six Teas, Mr. Berners was first, Mr. Orpen second, and Rev. Foster-Melliar third.

The evening fête and the display of fireworks was thoroughly successful, and the faith of the good people of the neighbourhood in a fine day for Woodbridge Rose Show is more firmly established than ever.—W. R. RAILLEM.

BRIGHTON.

THE Brighton and Sussex Horticultural Association's first Show of the season was held in the Royal Pavilion on Wednesday and Thursday, July 9th and 10th, and was devoted to Roses. Owing, however, to the unfavourable weather a large proportion of the entries received were unavoidably withdrawn on the day before or the morning of the Show, and competition was consequently somewhat restricted. The blooms staged were of good quality, the colours being especially bright.

Eleven open classes were provided, but we can only refer to a few of them. With forty-eight single trusses Mr. Frank Cant, Braiswick, Colchester, scored another of his numerous victories this year, and included in his box grand examples of the following varieties:—*Général Jacqueminot*, Mrs. H. Turner, *Merveille de Lyon*, *Prince Camille de Rohan*, *Pride of Reigate*, *Crown Prince*, *Marie Verdier*, *Prince Arthur*, *Marie Finger*, *Sir Rowland Hill*, *Niphetos*, *Horace Vernet*, *Earl of Pembroke*, *Madame I. Pereire*, *Dr. Andry*, *G. Caillot*, *Marie Baumann*, *Her Majesty*, *François Michelin*, *Madame Victor Verdier*, *Duchess of Leeds*, *Souvenir d'Elise Vardon*, *Duke of Edinburgh*, *The Bride*, *Duke of Teck*, Mrs. J. Laing, *Madame A. Lavallée*, *Viscountess Folkestone*, *Ulrich Brunner*, *Lady Mary Fitzwilliam*, *Docteur Dor*, *Madame Eugène Verdier*, *J. Stuart Mill*, *Captain Christy*, *Star of Waltham*, *Catherine Mermet*, *Earl of Dufferin*, *Baroness Rothschild*, *Etienne Levot*, *Madame de Watteville*, *Lady H. Stewart*, *Pride of Waltham*, *Victor Hugo*, *Lady Sheffield*, *A. K. Williams*, and *Comtesse d'Oxford*. The second place was taken by Messrs. Paul & Son, Cheshunt, who had a very even and creditable collection; Messrs. Perkins & Son, Coventry, being third.

For twenty-four varieties, three blooms of each, Mr. Frank Cant succeeded in winning the premier prize, showing similarly fine blooms to those in his forty-eight stand of the varieties named herewith:—Mrs. John Laing, *Alfred Colomb*, *Comtesse d'Oxford*, *Madame Eugénie Verdier*, *Charles Darwin*, *Niphetos*, *Madame Ducher*, *Duchesse de Morny*, *Marie Verdier*, *Lady H. Stewart*, *Général Jacqueminot*, *The Bride*, *Baroness Rothschild*, *Etienne Levot*, *Pride of Waltham*, *Marie Baumann*, *Marie Finger*, *Dr. Andry*, *A. K. Williams*, *Duchess of Leeds*, *Beauty of Waltham*, *La France*, *Heinrich Schultheis*, and *Pride of Reigate*. The second and third prizes were awarded to Messrs. Paul and Son and Messrs. Perkins & Son in the same order as the class already mentioned. In the class for twelve trusses of any Rose Mr. Frank Cant took the lead with beautiful examples of Mrs. John Laing, showing the characters of this fine variety to perfection. Messrs. Paul & Son

were second with *Her Majesty*, and Messrs. Perkins & Son third with Mrs. John Laing. Messrs. Paul & Son scored an easy victory with twelve Teas and Noisettes, showing handsome substantial clean blooms of *Niphetos*, *Catherine Mermet*, *Jules Finger*, *Maréchal Niel*, *Innocente Pirola*, *Souvenir d'un Ami*, *Marie Van Houtte*, *Francisca Kruger*, *Madame de Watteville*, *Madame Lambard*, *Madame Cusin*, and *The Bride*. With Moss and Provence Roses Messrs. Paul & Son were also first, followed by Messrs. Ewing & Co., Norwich.

In the amateurs' classes the competition was not by any means keen, still the blooms were fairly good. E. M. Bethune, Esq., Denne Park, Horsham, and A. Slaughter, Esq., Jarvis Villa, Steyning, shared the prizes, being first and second as named with forty-eight varieties, twelve Hybrid Perpetuals, twelve Teas, and six blooms of any Rose. A beautiful basket of Roses gained the first prize for Messrs. Perkins & Sons. There were also some tasteful stands of Roses and other flowers. Mr. G. Miles, Dyke Road, had a tasteful group of Ferns, and a large group of foliage and flowering plants. Messrs. J. Cheal & Sons, Crawley, exhibited an effective collection of hardy flowers and Roses; Mr. J. F. Mould, Pewsey, contributing a group of stove and greenhouse plants.

WIRRAL.—JULY 10TH.

It is now about twelve years since I propounded to the readers of the Journal the geographical puzzle as to their knowledge of where Wirral was, and it has been to me a source of great pleasure that I have been able to attend every Show that the Wirral Rose Society has held. That in those years I have seen many and great changes must be self-evident, and that the Exhibition of to-day is not like many of its predecessors is simply to say that it is twelve years old. Exhibitors have changed, secretaries have changed, the place of meeting has changed, and the seasons have changed, for unquestionably we have not the weather for Rose shows we used to have, and this season has been no exception to the long cycle of bad years that we have experienced. Yet, withal, without the assistance of those southern giants who used to send the blooms, Paul, Cant, and others, and notwithstanding that the principal local exhibitor, Mr. T. B. Hall of Larkwood, has retired from the fray, there was a very good Show, and some of the blooms were of great excellence; indeed the marvel was that with all the miserable weather we have lately had Roses should have been so well exhibited. Teas were, of course, the principal sufferers, but even they were shown in great beauty. Perhaps the most interesting feature of the Show was (as far as Roses were concerned) the two new seedlings of Messrs. Dickson & Son of Newtownards, Co. Down, Ireland—*Margaret Dickson*, a lovely white flower of great substance, and the *Marchioness of Dufferin*, a beautifully flesh coloured pink flower; these were both awarded first-class certificates. I think both will keep up the well-earned reputation of the great firm, and will be found on many a winning stand. The thick leathery foliage of *Margaret Dickson* is very reliable, and will almost make it mildew proof.

In the nurserymen's class for forty-eight single blooms the English Fruit and Rose Company (late Cranston's) carried off the first prize with the following—*Marie Susanne Rodocanachi*, *Alfred Colomb*, *Merveille de Lyon*, *Camille Bernardin*, *Senateur Vaisse*, *Ulrich Brunner*, *Earl of Dufferin*, *Heinrich Schultheis*, *Queen of Queens*, *Le Havre*, *Her Majesty*, *Auguste Rigotard*, *Elie Morel*, *Mary Pochin*, a pretty bloom of a scarce Rose, indeed never seen except from this firm; *Duchess of Bedford*, *Duchesse de Morny*, *Victor Verdier*, *Earl of Pembroke*, *Madame Gabriel Luizet*, *Dingee Conard*, *John Hopper*, *A. K. Williams*, *Madame Eugène Verdier*, *Louis Van Houtte*, *Mrs. John Laing*, very beautiful; *Comte Raimbaud*, *Marie Verdier*, *Baroness Rothschild*, *François Michelin*, *Lady Sheffield*, *Lady Helen Stewart*, *La France*, *Beauty of Waltham*, *Madame Montet*, *Star of Waltham*, *Rubens*, *John Stuart Mill*, *Madame Victor Verdier*, *Miss Edith Gifford*, *Prince Arthur*, very fine dark flower; *Charles Lefebvre*, *Général Jacqueminot*, *Horace Vernet*, and *Sir Rowland Hill*. Messrs. Dickson & Sons of Newtownards were an excellent second, and amongst their flowers were the two seedlings already alluded to, and Miss Jeanie Dickson, a flower of a lovely soft shade of pink, and Messrs. Dickson, Chester were third.

In the class for twenty-four trebles (class 2), the English Rose and Fruit Company are again first with the following:—*Madame Eugène Verdier*, *Duke of Edinburgh*, *Heinrich Schultheis*, *John Stuart Mill*, *François Michelin*, *Ulrich Brunner*, *Merveille de Lyon*, *Camille Bernardin*, *Madame Gabriel Luizet*, *Mrs. John Laing*, *Lady Sheffield*, *Marie Verdier*, *Louis Van Houtte*, *Marie Susanne Rodocanachi*, *A. K. Williams*, *François Michelin*, *Ulrich Brunner*, *Le Havre*, *Baroness Rothschild*, and *Beauty of Waltham*. Beautiful as these stands were, there is no doubt that a few more Teas would have lightened up the boxes considerably. Messrs. J. Dickson & Sons were second, and Dickson, Chester, third. In class 3, for the best eighteen Teas, Mr. Geo. Prince was first with a stand which, if not quite up to his usual excellence, was yet very beautiful. It contained *Comtesse de Nadaillac*, *Souvenir de S. A. Prince*, *Madame Cusin*, *Marie Van Houtte*, *Catherine Mermet*, *Innocente Pirola*, *The Bride*, *Souvenir de Paul Neyron*, *Madame Furtado* (a beautiful colour), *Alba rosea*, *Anna Ollivier*, *Souvenir d'Elise Vardon*, *Jean Ducher*, *Rubens*, *Francisca Krüger*, *Souvenir d'un Ami*, *Hon. Edith Gifford*, and *Triomphe de Rennes*, a Rose very rarely exhibited, and although at one time a great favourite, I always associate it with a certain cottage in Okeford Fitzpaine, where my dear old friend, Mr. Radclyffe, used to grow it in great perfection. Messrs. A. Dickson & Sons were second, and the English Fruit and Rose Company third.

Coming now to the amateur classes, again Mr. Lindsell "sweeps the

board," his box of thirty-six varieties easily taking first with blooms of the same excellence and finish which have characterised all his exhibits during this season. The varieties were the following:—A. K. Williams, Her Majesty, Mrs. John Laing, Duke of Wellington, Madame Victor Verdier, François Michelin, Général Jacqueminot, La France, Earl of Dufferin, Captain Christy, Beauty of Waltham, Merveille de Lyon, Madame E. Verdier, Horace Vernet, Marie Verdier, Dr. Andry, Princess of Wales, Lady Helen Stewart, Madame Gabriel Luizet, John Stuart Mill, Duchesse de Morny, Rosieriste Jacobs, Star of Waltham, Victor Hugo (very fine), Louis Van Houtte, Le Havre, Heinrich Schultheis, Charles Darwin, Comte Raimbaud, Etienne Levet, Duke of Albany, Lady Sheffield, Duchess of Bedford, and Prince Camille de Rohan.

In class 6, for twelve trebles, Mr. Lindsell was again first with fine blooms of Ulrich Brunner, La France, Merveille de Lyon, Madame Victor Verdier, Lady Sheffield, Marie Baumann, Marie Verdier, Beauty of Waltham, A. K. Williams, and Victor Hugo (very fine). In class 7, for eighteen varieties of Teas and Noisettes, the Rev. F. R. Burnside was first with beautiful blooms of Madame Cusin, Madame de Watteville, Comtesse de Nadaillac, Souvenir d'Elise, &c. In class 8, for twelve blooms of any dark Rose, the first prize was awarded to J. G. Churton, Esq., for Marie Baumann; and in class 9, for any light Rose, to the Rev. J. H. Jackson, Stagsden Rectory, Bedford, for fine blooms of La France. In class 10, for amateurs in Lancashire and Cheshire, the Rev. Lionel Garnet of Christleton Rectory, was first with an excellent stand of the following flowers:—Duchess of Bedford, Her Majesty, Dupuy Jamain, Charles Lefebvre, Madame Eugène Verdier, Louis Van Houtte, Countess of Rosebery, La France, Ulrich Brunner, Etienne Levet, Merveille de Lyon, Duchesse de Morny, Earl of Dufferin, Madame Gabriel Luizet, Comte Raimbaud, Alfred Colomb, Grace Darling, Camille Bernardin, Madame Charles Crapelet, Alfred Dumesnil, Marie Baumann, François Michelin, Lady Mary Fitzwilliam, and Prosper Laugier. In class 11, for twelve varieties, J. W. Crowther, of Oxton, was first with an excellent stand, consisting of A. K. Williams, Prince Arthur, Dupuy Jamain, La France, Duchess of Bedford, Baroness Rothschild, Xavier Olibo, Le Havre, Général Jacqueminot, and Ulrich Brunner. W. Bell, Esq., of New Brighton, was second with an excellent stand, which improved in appearance as the day advanced. D. Walker, Esq., was third. In class 12, for six varieties, R. Greenshields, Esq., was first; and in class 13, for twelve varieties of Teas, T. Gree, Esq., Allerton, was first; Rev. L. G. Garnett second. Mr. Lee's flowers were Madame Cusin, Innocente Pirola, Madame de Watteville, Jean Ducher, Caroline Kuster, Catherine Mermet, Etoile de Lyon, Alba Rosea, Comtesse de Nadaillac, Prince of Wales, Anna Ollivier, and Francisca Kruger. In class 14, for six varieties of Tea and Noisettes, R. H. Bulley, Esq., was first with Anna Ollivier, Souvenir d'un Ami, Madame Lambard, Madame de Watteville, Comtesse de Nadaillac, and Rubens.

In many of these western and northern shows the exhibition of hardy perennials forms a most interesting feature of the Show, and when such a "past master" in this most interesting class of plants as the Rev. Lionel Garnett exhibits, one is sure of a sight which gladdens one's heart to see. He had on this occasion a very grand stand comprising the following:—Phlox Lady Napier, Lilium pardalinum, Delphinium, Alstroemeria chilensis Alstroemeria aurantiaca, Centaurea macrocephala, Lilium testaceum, Scabiosa caucasica, Oenothera Forbesae, English Iris, Campanula persicifolia alba, Gladiolus Charming Bride, Catananche cœrulea, Gladiolus The Bride, Galega officinalis, Campanula pelviformis, Lychis Haageana, Potentilla Dr. Andry, Campanula Hendryana, Gaillardia grandiflora, Polemonium Richardsoni, Papaver nudicaule, Centaurea dealbata, and Lychnis chalcedonica.

This is one of those Shows where Roses are sold for the benefit of hospitals, and Mrs. Oakshott presided at the Rose stall. The sale was brisk, and realised £23 for the Birkenhead Children's Hospital, many exhibitors contributing their "spares," and Mr. T. B. Hall of Larkwood a large quantity of his magnificent Roses.—D., Deal.

GLOUCESTERSHIRE.

"WHAT an excellent Show!" "A grand Show!" "The best provincial Show of the season!" Such were the exclamations one heard on all sides from those who had frequented most of the previous exhibitions of the year; and, as I had already seen several, I am fully able to sustain the verdict thus passed. The Corn Exchange was filled with flowers. The quality of the exhibits was remarkably good, and the competition in many of the classes very keen. It was well known how very hard had been the work undertaken by the Rev. T. Halbrow, the Secretary, and how indefatigably he had worked; and it must have been a great pleasure to him that his labours and those of his Committee had been crowned with success; for alas! in some cases we may work and toil and nothing comes of it. But when all these exertions were crowned with that most essential requisite for success, a fine day, it must have been particularly gratifying to all concerned. This, the third exhibition of the Society, was, without doubt, an improvement on its predecessors; and the Gloucestershire Rose Society would seem now to be firmly established on a firm footing. It has undoubtedly stimulated the zeal of local growers; and after all, this is, I believe, that which is the real good that comes out of these exhibitions; and when such growers for sale as the British Rose and Fruit Company, Messrs. Jefferies, Cooling and others live in neighbouring counties and exhibit, the Society may well be independent of foreign aid, although all comers would be, and are, gladly welcomed.

Although in most schedules, as in this, the class of nurserymen head

it, I fancy the amateur classes are those which excite the keener interest, for it is amateurs who throng the exhibition room or tent, and they want to know what has been done by those who occupy the same position as themselves.

The first prize for thirty-six blooms was won by E. B. Lindsell, Esq., of Hitchin, the champion amateur of the year, who worthily maintained by the character of his blooms the position he won at the National on Saturday. His stand was a remarkably fine one, the flowers being not only of good colour and substance, but also of full size, a point about the attainment of which he has expressed some doubts. His blooms consisted of Ulrich Brunner, Captain Christy, Rosieriste Jacobs, Pride of Waltham, Horace Vernet, Her Majesty, Marie Baumann, Charles Lefebvre, La France, M. Gabriel Luizet, François Michelin, Princess of Wales, Jean Verdier, Duke of Wellington, Baroness Rothschild, Alfred Colomb, Niphotos, Lady Helen Stewart, Lady Sheffield, Duchesse de Morny, Louis Van Houtte, Marie Susanne Rodocanachi, Merveille de Lyon, Dupuy Jamain, Rubens, Countess of Rosebery, Le Havre, Madame Cusin, Dr. Andry, Duchess of Bedford, Souvenir d'un Ami, Etienne Levet, Victor Hugo, E. Y. Teas and Heinrich Schultheis. The Rev. J. H. Pemberton was second, and J. P. Budd, Esq., of Bath third. In the class for twenty-four varieties there was a strong competition, fourteen boxes being put up. The first prize again fell to Mr. Lindsell, the second to the Rev. J. H. Pemberton, and the third to C. J. Palley, Esq., of Lower Eaton, Hereford. Mr. Lindsell's blooms were Horace Vernet, Mrs. John Laing, Duke of Edinburgh, Madame Gabriel Luizet, Marie Baumann, Marie Susanne Rodocanachi, Charles Lefebvre, François Michelin, Captain Christy, Heinrich Schultheis, A. Colomb, La France, Victor Hugo, Comtesse d'Oxford, Xavier Olibo, Earl of Dufferin, Fisher Holmes, Le Havre, Baroness Rothschild, E. Y. Teas, Marie Baumann, Marie Verdier, Duchess of Bedford. In the class for twelve trebles, Mr. Lindsell was again first with beautiful flowers of Marie Baumann, Duke of Wellington, Horace Vernet, Baroness Rothschild, Pride of Waltham, Louis Van Houtte, Mrs. John Laing, a beautiful triplet, Le Havre, Dr. Andry, Marie Verdier, Merveille de Lyon and A. K. Williams; the Rev. J. H. Pemberton second and Dr. Budd third. In the class for twelve varieties the first prize was taken with Marie Verdier, Victor Verdier, Charles Lefebvre, Lady Mary Fitzwilliam, Magna Charta, Ulrich Brunner, Countess of Pembroke, Madame Lambard, Beauty of Waltham, Marie Van Houtte, Exposition de Brie, and Pride of Waltham. The Rev. J. H. Pemberton was second.

In the class for eighteen Teas or Noisettes the Rev. T. R. Burnside, the champion Tea grower of the year, won the first prize with beautifully clean and perfect blooms of the following:—Madame Cusin, Comtesse de Nadaillac, Marie Van Houtte, Catherine Mermet, Innocente Pirola, Souvenir d'un Ami, Madame Bravy, Marie Van Houtte, Rubens, Anna Ollivier, Francisca Kruger, Jean Ducher, Hon. Edith Gifford, Caroline Kuster, Souvenir d'Elise, Paul Neyron, Madame de Watteville. Dr. Budd was second.

In the class for twelve Teas Mr. Burnside was again first, Dr. Budd second, and Mr. W. Narrowing of New Headington, Oxford, third. Mr. Burnside's blooms were Catherine Mermet, Innocente Pirola, Souvenir d'un Ami, Anna Ollivier, Hon. Edith Gifford, Comtesse de Nadaillac, Madame Bravy, Rubens, Princess of Wales, Caroline Kuster, Souvenir d'Elise Vardon, Francisca Kruger.

In the class for twelve varieties, trebles, Mr. Burnside was again first, Mr. Budd second, and Mr. Alex. Hill Gray third. Mr. Burnside's flowers were Hon. Edith Gifford, Catherine Mermet, Marie Van Houtte, Souvenir d'un Ami, Innocente Pirola, Anna Ollivier, Francisca Kruger, Jean Ducher, Madame Bravy, Jules Finger, Madame Cusin, and Rubens.

Amongst nurserymen the leading place was taken by the English Fruit and Rose Company (late Cranston), who were first in seventy-twos and twenty-four trebles, the second position being occupied by Messrs. Harkness & Son of Bedale, Yorkshire. Amongst the flowers in the first prize stand were grand blooms of Charles Lefebvre, Mrs. John Laing, Alfred Colomb, Marie Baumann, John Stuart Mill, Horace Vernet, Rosieriste Jacobs, Madame Gabriel Luizet, Lady Sheffield, Pride of Waltham, Madame Eugénie Verdier, Xavier Olibo, Marquise de Castellane, Marshall P. Wilder, Baroness de Rothschild, and other well known flowers. Mr. Geo. Prince took the leading place with Teas. He showed lovely blooms of Comtesse de Nadaillac, Madame Hoste, Souvenir d'Elise, Madame Watteville, Madame Cusin, Rubens, The Bride, and Francisca Kruger, &c.

Amongst the Gloucestershire nurserymen the leading place was taken by Messrs. Jefferies & Son of Cirencester, who had most excellent flowers. In twenty-four varieties they took first prize with La France, Madame Prosper Laugier, Madame Hippolyte Jamain, Duke of Teck, Mrs. John Laing, Comtesse d'Oxford, Sénateur Vaisse, Marie Verdier, Louis Van Houtte, Madame Gabriel Luizet, Horace Vernet, Madame Clemence Joigneaux, Marie Finger, Fisher Holmes, François Michelin, Marie Baumann, Ulrich Brunner, Madame Montet, and Charles Darwin. The prize for the best twelve of any one dark Rose was won by the English Fruit and Rose Company with a beautiful stand of Alfred Cooling, the most perfect blooms bright and fresh, the prize for the best twelve of any light Rose being awarded to Messrs. Harkness and Son for fine blooms of La France; Dr. Budd second; Messrs. Cooling of Bath third. There was a spirited competition amongst the Gloucestershire amateurs, and considerable improvement was noticeable in their stands, although there is still room for improvement, especially in the setting up of the flowers, which in many cases was of the most elementary character, and there is no reason why local exhibitors should be behind others in this respect. There is no magic in the art,

and they can easily see from the "foreign" stands exhibited how different the style is to what it ought to be. The silver medal for the best H.P. was won by Mr. Lindsell with A. K. Williams, and for the best Tea by Mr. Pemberton with Souvenir d'Elise.

One very pleasing feature of the Show was the tastefully arranged stall for the sale of Roses for the benefit of the hospital. A considerable sum was realised for the benefit of this excellent institution and the children's hospital.

And so must end my brief and somewhat imperfect account of the Gloucestershire Rose Society's third Show. The Society evidently shows signs of great vitality, and if it continues, as it is to be hoped it may, under the guidance of the present able and indefatigable Secretary, a long and prosperous career is before it.—D., Deal.



EVENTS OF THE WEEK.—To-day (Thursday) the National Rose Society's provincial Show will be held in Birmingham, and the Helensburgh Show will take place on the same day. Friday, July 18th, will witness a large gathering of supporters of the Gardeners' Orphan Fund at the annual meeting and dinner in the Cannon Street Hotel. As already announced, Mr. Shirley Hibberd will preside at the dinner. On Tuesday, July 22nd, National Carnation and Picotee Society's Show; and an Exhibition of Ferns will be held in the Royal Horticultural Society's Gardens, Chiswick. The Conference on Carnations will begin on the 22nd inst. at 2.30 P.M., and the following papers will be read—viz., "The Carnation from a Botanical Point of View," by Mr. F. N. Williams, F.L.S.; "The Florists' Carnation and Picotee as Exhibition Flowers," by Mr. Harry Turner; "Carnations and Picotees in Towns," by Mr. Martin Rowan; "Border Carnations," by Mr. Richard Dean. On the 23rd the Conference on Ferns will open at 2 P.M., and papers will be read as follows:—"The Systematic Relations of Ferns," by Professor Bower, F.L.S.; "Hybrid Ferns," by Mr. E. J. Lowe, F.R.S.; "Plumose British Ferns," by Mr. C. T. Drury, F.L.S.; "Hardy Ferns and their Cultivation," by Mr. J. Birkenhead. Two silver challenge cups will be awarded to amateurs by the R.H.S.—viz., one for the best collection of hardy Ferns, the other for the best collection of Filmy Ferns grown without heat. Intending exhibitors are requested to communicate with Mr. Barron, Superintendent R.H.S. Gardens, Chiswick, on or before Friday, July 18th, stating the classes in which they propose exhibiting, and giving an approximate idea of the amount of space they will require.

— **THE WEATHER.**—Wet and dull weather has predominated during the past week, and this record has become unpleasantly monotonous. On July 8th we read—"There was a heavy fall of snow in Scotland during Monday night, and yesterday the Grampians and Monadhliadh hills were covered as in midwinter. The rivers and streams are in high flood." Fortunately there seems to be a prospect of an improvement. Monday was a summer's day, and being, moreover, St. Swithin's day also, it will be regarded by many as a good augury. Wednesday also was a brilliant day in London.

— **THE NATIONAL CHRYSANTHEMUM SOCIETY'S GENERAL COMMITTEE** assembled at Anderton's Hotel, Fleet Street, on Monday evening last to receive the lady representative of the Northern Horticultural Society of Tasmania (Mrs. Thrower), who has come to England as a delegate from the affiliated Society, to represent it at the Centenary Exhibition and Conference next November. An address was presented to Mrs. Thrower, and she responded in an admirable speech, in the course of which she referred to the stimulus that had been imparted to Chrysanthemum culture in the Antipodes by the offer of the National Society's medals as prizes. The business of the evening also included the affiliation of thirteen Societies and the election of twenty-three Fellows and members.

— **THE Executive Committee of the GARDENERS' ORPHAN FUND** met in the Caledonian Hotel on Monday last, Mr. John Laing presiding. The principal business was to complete the arrangements for the annual meeting and dinner at the Cannon Street Hotel on Friday next. Some discussion also took place with regard to the institution of a memorial fund in honour of the late respected Chairman

(Mr. G. Deal), and promises of substantial support have already been received. Particulars of the proposed course will be announced on Friday.

— **THE NATIONAL ROSE SHOW, BIRMINGHAM.**—The provincial Exhibition to day (Thursday) in the Birmingham Botanical Gardens promises to be one of the best the Society has held; the entries are numerous, and the weather is favourable for Roses.

— **PORTSMOUTH SHOW.**—An excellent Show of plants, fruit, and vegetables was held in the Victoria Park, Portsmouth, on Tuesday last. Mr. Cypher secured the chief prize in good competition with twelve specimen plants. Mr. Wills arranged by far the best group of plants. Mr. Inglefield, Tedworth Gardens, was first with a collection of fruit. There was close competition in nearly all the important classes.

— **LEWISHAM SHOW.**—We are requested to state that the first prize for forty-eight Roses was won by Messrs. G. Bunyard & Co., Maidstone, and not by Mr. Burnand, as stated in our report. The Secretary states that in the vegetable classes eighteen trays or baskets were placed in competition for the Society's and Messrs. Sutton & Sons' prizes. No doubt that was so, but there was much room for improvement in this section of the Show all the same.

— **CRYSTAL PALACE ROSE SHOW.**—As a member of the Committee that adjudicated upon the merits of the new Roses submitted for certificates at the above Exhibition, will you allow me to supply an omission in your report in case it has escaped notice? Together with the two Roses mentioned in your report of the Show, a first-class certificate was awarded by the National Rose Society to Messrs. A. Dickson & Sons of Newtownards, Ireland, for a new white Rose, Margaret Dickson.—JOSEPH H. PEMBERTON.

— **THE WEATHER LAST MONTH.**—June was a very changeable month, with only three bright days. Rain fell on fifteen days, the greatest daily fall being 0.34 on the 30th, and the total fall 1.85 inch. Barometer was highest at 9 A.M. on 15th, 30.42; lowest, 29.15 at 9 P.M. on 30th. Highest shade temperature, 75° on 25th; lowest, 37° on 1st and 8th; lowest on grass, 32° on the 1st. Mean temperature of the month, 57.78. Wind was in a westerly direction twenty-four days. The garden spring ran 20 gallons per minute on the 30th.—W. H. DIVERS, *Ketton Hall, Stamford.*

— **THE WOLVERHAMPTON HORTICULTURAL EXHIBITION** opened on Tuesday, the 15th inst., in the public park, and with splendid weather. The Exhibition was an extensive one, much greater than that of last year, and the "open to all" plant tent was filled with first-class specimens. Mr. Cypher of Cheltenham took the lead, and Mr. Alderman Marriott, Coventry, was a close second. The display of Roses was the best ever seen in Wolverhampton, Mr. Frank Cant taking the lead. Mr. Blair, Trentham Gardens, led in fruit. Some good Orchids were shown. We shall give a fuller report in our next issue. There was a very large attendance on the first day.

— **UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.**—The quarterly meeting of the above Society was held at the Caledonian Hotel, Adelphi Terrace, Strand, on Monday evening last, Mr. Nathan Cole in the chair. Seven new members were elected, making a total of fifty for the half year. The Treasurer, Mr. J. Hudson, reported that he had invested £200 in 2½ per cent. Consols since the last meeting. There is one sick member only on the funds. One member died during the quarter, and the amount standing to his credit in the ledger (£25 10s. 3½d.) was paid to his widow, Mrs. Hannah Back. A vote of condolence was accorded to Mr. H. Williams on the death of the late Mr. B. S. Williams, who was one of the oldest of the Society's honorary members. The usual business having been transacted, a vote of thanks to the Chairman ended the meeting.

— **SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP, NOTTS, FOR JUNE.**—56 feet above mean sea level. Mean temperature of month, 57.1°. Maximum on the 10th, 71.7°; minimum on the 8th, 36.6°. Maximum in the sun on the 18th, 132.9°; minimum on the grass on 8th, 28.7°. Mean temperature of the air at 9 A.M., 58.8°; mean temperature of the soil 1 foot deep, 57.0°. Nights below 32° in shade none, on grass two. Total duration of sunshine in month 111 hours, or 22 per cent. of possible duration. We had two sunless days. Total rainfall, 2.11 inches. Rain fell on fifteen days. Average velocity of wind, 7.4 miles per hour; velocity exceeded 400 miles on one day, and fell short of 100 miles on nine days. Approxi-

mate averages for June:—Mean temperature, 57.1°. Rainfall, 2.26 inches. Sunshine, 157 hours. A very dull month, without any warm summer weather. The greater part of the rain fell in the last week.—JOSEPH MALLENDER.

— SALE OF LEIGHAM COURT, STREATHAM.—One of the most picturesque and best kept gardens in the metropolitan district, Leigham Court, Streatham Hill, has just been sold for £92,000, and has been purchased by a building company for the erection of small houses. The garden comprises sixty-six acres, is laid out in a most tasteful style, and has for some years been under the charge of an experienced and skilful practical gardener, Mr. E. Butts, who has kept it in admirable condition. Vineries, Peach and p'ant houses, a charming fernery, conservatory, with pits, &c., constitute the glass. The garden includes a fine old orchard, roscery, &c., and is stocked with choice shrubs and trees. Leigham Court has been the residence of Mrs. Treadwell for a long period, and was originally taken by the late Mr. J. Treadwell, a successful railway contractor, one of those who amassed a large fortune at the time the railway fever was at its height. Many will regret the loss of this beautiful garden.

— APPLE GROWING IN NOVA SCOTIA.—While the whole of Nova Scotia may be regarded as adapted for Apple culture, about one-half, comprising those counties fringing on the Bay of Fundy, possesses special advantages in climate and soil for fruit growing. Of this part the three counties, Hants, Kings, and Annapolis, form the pick of the province. Here is the centre of the Apple industry, covering at present a strip of country about two to two and a half miles wide on each side of the Windsor and Annapolis railway that traverses the district, some eighty miles long, which last year produced some 300,000 barrels of fruit of the first quality, worth on the spot some 650,000 dollars. Of this area only about one-thirtieth is planted, and one-sixteenth is bearing, although the one-thirtieth is rapidly approaching the bearing period; its ultimate possible yield may therefore be imagined. It is only during the last few years that Nova Scotian Apples have earned a reputation on the London market, and ever since hundreds of acres of new land have been planted annually with tens of thousands of trees.—(*American Cultivator.*)

— PROPOSED MEMORIALS TO THE LATE MR. G. DEAL AND MR. B. S. WILLIAMS.—I am pleased to see Mr. Sharman has proposed what I myself had thought of—viz., starting an Orphan Fund Memorial to our late Chairman, Mr. Deal, showing how highly his services were appreciated by those who had the pleasure of working with him in this good cause, and in doing this we must not forget it was to his far-seeing care we did not encumber our limited finances with bricks and mortar, &c., and so make it many years ere the orphan could reap the benefit intended from this scheme. Thus to our lamented friend we owe much of the successful working of the Institution. Mr. Findlay has proposed a similar testimonial to Mr. Williams as an approximate means of leaving on record to those who succeed us in the profession how such men were esteemed by those who had enjoyed many years of close friendship. I am sure, having known him long and well, nothing would be more in keeping with his life than trying to lend a helping hand to the fatherless little ones of those who have not been equally successful in life as those we now hope to memorialise. Cannot we make an effort and raise a goodly sum for this cause, thus forming a fitting sequel to two good and useful lives? I need hardly say I will help this scheme in every way that I can.—CHARLES PENNY.

— FICUS ROXBURGHII.—Some very remarkable observations on the production of the ripe figs of *Ficus Roxburghii*, Wall., have recently been published by Dr. D. D. Cunningham, F.R.S., of the Indian Medical Service. The species is dioecious, the male receptacles or figs containing perfect male flowers with pollen, together with imperfect or atrophied female or "gall-flowers," which never produce seed; the female figs contain perfect female flowers only. Both kinds of fig are visited by the "fig insect," usually a species of *Eupristis*, for the purpose of laying its eggs in the ovary. This is effected in the "gall flowers" of the male figs; but in the female figs the efforts of the insect to deposit its eggs within the ovary are frustrated by the great thickness of the wall of the ovary. It is very rare to find more than a very few grains of pollen in the female figs; and, according to Dr. Cunningham, the embryo-sac in the female flowers retains, up to the period of the visits of the insect, the character of a uninucleate cell. The full development of the embryo in the female flowers is brought about simply by hypertrophy of the tissues, the result of the stimulation

caused by the unsuccessful attempts of the insect to pierce the wall of the ovary. If these observations are confirmed, we have here one of the most remarkable instances of parthenogenesis yet recorded in the vegetable kingdom.—(*Nature.*)

— THE PHYSIC GARDEN, CHELSEA.—It having been stated in the *British Medical Journal* and other public papers that the Apothecaries' Company are about to sell this garden, which was presented to them in 1721 by Sir Hans Sloane on condition that "it should at all times be continued a physic garden, for the manifestation of the power and wisdom and goodness of God in creation, and that the apprentices might learn to distinguish good and useful plants from hurtful ones," it is thought desirable that the earliest opportunity should be taken to call public attention to the matter. The garden, although not open to the public, can be seen by passers-by for 150 yards along the Embankment, on which side it is enclosed by a dwarf wall and railing. It still retains its original formal character, and its Cedar, which has for many years been one of the many landmarks on the river bank. Should this scheme be carried out Chelsea will lose one of its characteristic features, and another open space will be lost to the public for ever. It is suggested that some scheme might be devised in connection with the Polytechnics or City Guilds so that more persons might have the opportunity of availing themselves of the garden for the study of botany, or that it might be utilised in some other way so as to prevent its being covered with houses. The future of the garden being a matter of deep interest to the inhabitants, a meeting was arranged to be held in the Town Hall, King's Road, Chelsea, on Wednesday, at five o'clock, to elect a committee to watch the matter. The Right Hon. the Earl of Meath, Chairman of the Metropolitan Public Gardens Association, was announced to take the chair.



MEMORIAL TO THE LATE MR. B. S. WILLIAMS.

MR. BRUCE FINDLAY proposed last week what many have been discussing at London horticultural meetings—namely, the desirability of commemorating the late Mr. B. S. Williams in some suitable way. Mr. Alfred Outram, 7, Moore Park Road, Fulham, is also taking steps to ascertain the general opinion as to the form this should assume. A Committee meeting will be probably called at an early date to discuss the subject, as all are agreed that something must be done. The majority with whom I have conversed respecting it think that a fund should be raised, and a Williams Memorial medal and prize be offered alternately in London, Manchester, and Edinburgh, any balance remaining to be divided amongst the horticultural charities. To facilitate the work of collection it might be desirable to form committees in each of the cities named, and we know what Mr. Findlay could accomplish in Manchester alone.—LEWIS CASTLE.

A MANUAL OF ORCHIDACEOUS PLANTS.

PART 6 of Messrs. J. Veitch & Sons' admirable work on Orchids, chiefly occupied with the genera *Cœlogyne*, *Epidendrum*, and *Calanthe*, but also includes *Spathoglottis*, *Phaius*, *Thunia*, *Chysis*, *Pleione*, *Diacrium*, *Nanodes*, *Arundina*, *Bletia*, *Broughtonia*, and other small genera. The part contains 134 pages, with numerous illustrations, and owing to the varied character of the matter it is one the most interesting yet issued. The character of the work is well maintained, the descriptions, references, history, and culture are disposed of in a most satisfactory manner—a combination of scientific accuracy with a popular style, wherever the subject admits of free treatment, distinguishing what will always be valued as a standard book of reference upon Orchids.

As an example of the style we extract the following account of the peculiar *Nanodes Medusæ* now placed as a sub-genus under *Epidendrum*. The illustration has been kindly furnished by Messrs. Veitch & Sons, and faithfully represents the chief characters of the flowers.

NANODES.

Nanodes was founded by Lindley upon a small-flowered species introduced from Rio de Janeiro in 1829 by the Horticultural Society of London, with which Reichenbach afterwards joined the far more

curious and attractive species described below. With these may be grouped two other species inhabiting the Andes of Central and South America, one of which, *Epidendrum* (*Nanodes*) *Matthewsi*, has been in cultivation for some time past in the Royal Gardens at Kew. The type species, *N. discolor* and *N. Medusæ*, were doubtfully referred to *Epidendrum* by Bentham, to which they conform as regards the union of the lip and the column, but their stems, prostrate in the first named species and pendulous in *N. Medusæ*, furnished with fleshy glaucous leaves, impart to them a habit so

revolute margin; lip very large, adnate to the column the entire length of the latter, with which it forms a funnel-like tube, the blade sub-orbicular, concave, bifid at the apex, densely and coarsely fringed at the margin, deep vinous purple. Column terete, green spotted with dark purple.

Introduced in 1867 by Messrs. Backhouse & Son of York, from the Andes of Ecuador, although probably first discovered a short time previously by Wallis, who sent a rude sketch of the flower to M. Linden of Ghent, by whom it was communicated to the late



FIG. 9.—*NANODES MEDUSÆ*.

distinct from all the cultivated *Epidendras* that for horticultural purposes it is better to keep them separate.

EPIDENDRUM (NANODES) MEDUSÆ.—Stems tufted, quite pendulous, as thick as the little finger, 6 to 10 inches long, sheathed by the imbricating bases of the leaves; leaves fleshy, lanceolate, acute, 2 to 3 inches long, glaucous green; flowers 3 inches across vertically, solitary or in pairs, terminal, with short terete bent ovaries that are pale green spotted with purple; sepals linear-oblong, acute, keeled behind, vinous-red in the middle, green at the base and apex; petals similar but narrower, and with slightly

Professor Reichenbach. It flowered for the first time in this country in the collection of the late Mr. John Day at Tottenham, in the summer of 1868. It is one of the most singular amongst Orchids, "its stout culms, its pale, glaucous foliage, and the extraordinary appearance and lurid purple of the flower give it a most sinister aspect."

Cultural Note.—*Nanodes Medusæ* should be grown in the *Odontoglossum* house, and receive treatment similar to that given to the dwarf growing *Odontoglossums*. Pans with ample drainage or teak baskets that can be suspended near the roof-glass should be

preferred. The compost of sphagnum moss and peat should be kept constantly moist, and the plant while growing should receive a liberal supply of water. The flowers of this Orchid are among the most persistent in the order.

ONCIDIUM PAPILIO.

AN interesting plant is this Orchid and not very difficult to grow. A warm house or stove is required. The plant may be grown either in a pot with peat, sphagnum, or an abundant drainage, or affixed to a charred block with copper wire. In the latter case sphagnum moss only need be used, but care must be taken that it has sufficient water. Its flower is peculiar, being formed like a butterfly of a bronze and yellow hue, and the bloom, which comes singly, issues from the extreme point of the knotted spike. This continues to flower for years, and on that account must not be cut away so long as blooms are wanted or it is possessed of sufficient energy to produce them. It is a most desirable and interesting plant, and comes from Trinidad.—W. S.

SCALDING AND CRACKING OF GRAPES.

IT is now some two years since a discussion took place in these pages on the scalding of Grapes, Lady Downe's in particular, and in which I took a part. Possibly the subject has remained fresh in the memory of some readers; at least it has to myself, as I have been a close observer since that time. Whether scalding of Grapes is more prevalent in the north than the south, and also more difficult to combat, as stated in the Journal a week or two since, I am not in a position to prove, but to my mind it appears illogical. The view I adopted did not appear very scientific to one able correspondent, but it was so to me. These notes may be in sufficient time to help the inexperienced to combat the evil, as their Grapes may be later than ours, for these have now passed through the ordeal of stoning and have commenced colouring.

I can honestly say that we have not had a single berry of Lady Downe's scald, and, as is well known, this is the Grape above all others which is prone to become damaged in this way. During the later stage of stoning exceptional care is necessary with Lady Downe's, whereas with other varieties ordinary care is all that is required to prevent their becoming scalded. The main point to prevent scalding of Lady Downe's is to keep sufficient heat in the pipes during the night and on dull days to prevent the berries becoming cold, or at least colder than the temperature of the house. A little air must be admitted to the house both by the top and bottom ventilators during the night, to be increased early in the morning, before the sun has power to raise the temperature 5°; the ventilation must also be increased as necessary, the aim being to allow the inside temperature to rise with the outside. When the temperature of the vinery is allowed to increase rapidly before sufficient air is admitted, the air becomes overheated, and is much warmer than the berries, consequently moisture condenses on them, and scalding takes place. The ventilation must also be decreased in the afternoon as the outside temperature lowers, care being necessary so that the temperature inside the vinery does not rise above the point it stood at when the ventilation was reduced. Many gardeners are very particular about the morning ventilation, yet they close the structure in the afternoon, and allow the temperature to rise to 80° or 90°. Scalding, under these circumstances, takes place just the same as when the temperature is allowed to increase rapidly in the morning.

The reason why I have included cracking of Grapes is because the same means which will prevent scalding in Lady Downe's will also entirely prevent cracking in Madresfield Court and Black Muscat. Many schemes have been put forward as remedies for this defect in this noble Grape, such as cutting halfway through the lateral, lessening the supply of water, &c., but this is of no avail if means are not taken to prevent the action of endosmose. Our Madresfield Court Vines receive abundance of moisture at the roots either when planted out or in pots. These latter I have watered five times during the day without the least ill effects, at least these were the best finished I ever saw. I am under the impression that deficiency of moisture at the roots is often the cause of inferior colour in this noble Grape, overcropping and weak root action through a cold root run being the next.

Returning to the subject of scalding of Lady Downe's, this evil is also very much aggravated through the roots working in a cold medium. Probably a strong root has descended into a cold and crude subsoil; the ascending sap, being very cold, also has its influence on the temperature of the berries. The same influence will also cause rust and imperfect fertilisation. When moisture condenses on the edge of the foliage to much extent at night time during the spring months, and whilst there is a comfortable warmth

in the pipes, it is a sure sign that a strong root or roots is affording the support, and also working in a cold medium. A single stray root is quite sufficient to act in this way, as I have proved beyond doubt. I have searched and found the root, and also stopped the evil. On warm subsoils this may not be apparent, but on clay soils it is undoubtedly the case.—A. YOUNG.

ZONAL PELARGONIUMS AT CHILWELL.

AMONGST the many plants of interest at the Chilwell Nurseries at present the Zonal Pelargoniums claim the most attention, and deservedly so, for the large house devoted to them is a blaze of colour. There are rich and intense shades of scarlet and deep crimson, while two approaching yellow are very conspicuous, together with many tints of salmon and shades of pink and rose intermingled with white varieties of rare excellence. The pips and trusses are fine, produced on stout footstalks, carrying the flowers well above the foliage. The plants are dwarf and in robust health.

I cannot attempt to mention all I saw, but I jotted down a few of the newest forms. Sir Percival is one of the finest whites yet introduced—a decided improvement upon Amy Amphlett, though the last mentioned is grand, and will probably become a favourite market variety. It has the character of holding its flowers a long time either on the plant or cut. Sappho, salmon rose, very distinct compact truss; Rev. F. H. Brett, vermilion scarlet pips of immense size; T. Hayes, of about the same form, but deeper in colour; Duchess of Portland, bright rosy pink, an improved Constance, very dwarf habit; Launcelot, salmon scarlet, immense truss, very distinct; Phryne, cerise, shaded plum colour, very showy, fine bold truss; Opal, certificated by R.H.S. in 1889, a beautiful shaded salmon, very fine; Souvenir de Mirande, a striking variety, should be in every collection; Golden Vesuvius, an advance on Wedding Ring, a charming variety, shows up to great advantage, and will be an acquisition for bedding purposes; M. Porier, rich carmine shaded violet, enormous trusses—this appears to be the best in this colour, award of merit R.H.S. 1889.

Some seedlings on trial in the same house arrest special attention amongst these are many varieties that will be heard more about in the future. We notice one, an advance upon Perdita; it is named Midsummer, as it was certificated and named by the R.H.S. on that day. The colour is salmon, shading to white, very dwarf and sturdy in habit. I also observed an orange variety, even brighter than Golden Vesuvius; the pips larger, in a fine truss, of dwarf habit.

Double forms of many colours were also seen, of which the most attractive are Princess Van Hainault, pure white, good habit, and very free, useful for market work; Goldfinder, orange, approaching yellow, very showy; Mrs. Condon, rosy cerise, of compact form; C. Darwin, rich magenta, very distinct; H. V. Raspail, scarlet, excellent; Lord Derby, bright rosy pink. Many more are worthy of mention, but the above were all I had time to note in a rather hurried visit.—VISITOR.

STRAWBERRY NOTES.

LARGE STRAWBERRIES.

AT the Maidstone Rose Show on 30th June Mr. Edwin Amies put up some remarkably fine plates of Jas. Veitch Strawberry. They were of a rich colour, clean, of a uniform flat cockscomb shape, well finished. He was awarded first prize for both twenty-four and twelve fruits, and they scaled an average of 1½ oz. each, being exactly alike. The largest berry was 7 inches round. This was a performance that any grower might be proud of, and this gentleman is an amateur, and grew them in the town. When grown like this Jas. Veitch is of good quality, and only wants a little sugar.—G. B.

LAXTON'S NOBLE.

MANY correspondents have given their opinions as to the forcing qualities of Laxton's Noble, but all appear to have found it to be a failure as regards forcing. I should be pleased if Mr. McIndoe of Hutton Hall could be induced to give his opinion of it, as I am told he has forced it extensively this season. The reports in the gardening papers spoke very highly of the fruits he showed at Edinburgh. He also might be able to answer Mr. Riding's question as to its travelling qualities, which would be acceptable to many readers as well as to—T. C.

AUGUSTE NICAISE.

THIS, I believe, as it becomes better known will be considered one of our very best early Strawberries. A few days since I inspected a long row of it fruiting with trial rows of numerous

others, new and older standard varieties, at Barkby Hall Gardens, Leicester, and the unquestionable verdict was that it was the best of them all. It is extremely fruitful on young plants. The fruit is large, brightly coloured, and of good flavour, decidedly superior in this respect to Noble. The habit of the plant is good, the foliage being plentiful, but close and compact. I was surprised not to see it mentioned in the published report of Mr. Wright's valuable paper on "Garden Strawberries," read at the British Fruit Growers' Conference. [It is "mentioned" there.—ED.]

THE CAPTAIN.

Amongst the same trial rows of Strawberries is a row of "Captain," which is evidently an excellent variety for light land. Mr. Lindsell, the able gardener here, considers it one of his best after several years' experience with it. It is very prolific, and the fruit are of good size and colour. The flavour is superior to Noble, but not so good as Auguste Nicaise, which is very sugary and brisk, and has a suspicion of Pine flavour. Neither is Captain quite equal to that variety in the matter of firmness. Both are much alike in point of earliness, and are four to six days later than Noble.—W.

SEEDLING STRAWBERRIES.

In your report of the Trentham Show an error occurs. The seedling Strawberries certificated by the Judges (Messrs. Wallis, Bannerman, and Selwood) were shown by me. No. 1, a cross between British Queen and President, will be an early Queen flavoured variety. It is early, robust, and bears freely, colour bright red. No. 2 is between British Queen and Countess, good flavour, rich dark red colour, and bears abundantly fruit of the largest size. I have two other seedlings equally promising, but owing to the wet and sunless weather I have not been able to show them in their best form. I commenced hybridising Strawberries in 1836, and have some 600 plants, the result of fourteen crosses from British Queen. The object I have in view is to raise some highly coloured Strawberries with the flavour of British Queen.—WM. ALLAN.

HARDY PLANTS.

ERODIUM MACRADENIUM.

THIS is not only one of the neatest of the alpine section of this genus, but it is also one of the most profuse flowerers. Its flowering invariably commences early in June, and is continued far into the autumn months; indeed, I have had it quite as good and as full of flower in October and November as at any time of the year. A tuft of this plant is one of the prettiest objects that can adorn the drier portions of the rockery at this season of the year. The flowers are of a delicate flesh colour, and veined with purplish rose, the broader petals having a dark base. Some years ago I was acquainted with a plant bearing the name of *E. macradenum* hybridum, which was an equally beautiful plant, having no dark base as in the above, and there is yet another, though I believe very rare at present, *E. trichomanifolium*, which is a sweetly pretty and graceful gem for the rockwork. These, with various other dwarf *Erodiums*, enjoy gritty loam in sunny exposures on the rockery, and I think their neatness and generally graceful habit should commend them to all lovers of choice alpine.

DIANTHUS ATRO-COCCINEUS.

A showy dark crimson variety belonging to *D. cruentus*, which this season has attained 2 feet high, the small tufted heads standing out conspicuously among many perennials at this time. Fortunately it is easily grown in any ordinary soil, and should be found in hardy plant collections more frequently. It is easily raised from seed, a source from which improvements in the way of larger heads of flowers may yet be forthcoming.

LYCHNIS CHALCEDONICA.

The vermilion scarlet heads of flower produced by this fine old perennial have no equal among hardy plants. It is not only the showiest of all, but it is also one of the cheapest and most easily grown. It grows more freely and produces decidedly finer heads of flowers than the double form, while a sixpenny packet of seeds will produce more than sufficient for any ordinary garden. It has been discarded by many because of its single flowers, but those who desire easily grown, showy, and vigorous perennials should not lose sight of one of the best. Given a fairly rich soil, for—by the way, while easily grown, it should be by no means starved—and it will never fail to give every satisfaction annually.

LYCHNIS FULGENS.

The various forms of this *Lychnis* are likewise excellent showy herbaceous perennials. They embrace a much wider range of

colour, and include shades of flesh, white, scarlet, crimson, vermilion, &c., while the size of their flowers individually also vary considerably, some of the larger being nearly 2 inches across, of neat compact habit, rarely more than 1½ to 2 feet high, they constitute highly effective plants for the second row of the border, and grow quite freely in any rich loamy soil. Not unfrequently, by reason of the small rootstock and the stems dying annually, they are taken for dead, and more than once have I been the means of saving them from being thrown out, as their place is not marked by anything when the plant is at rest, therefore the necessity of labelling in some form or other. The rootstock may be compared to a cluster of Dahlia tubers in miniature and equally fleshy and brittle. Slugs are rather fond of the young shoots as they appear through the ground in spring, and on some heavy soils these play sad havoc with the plants if the latter are not attended to in time.—J. H. E.

ROYAL HORTICULTURAL SOCIETY.

JULY 8TH.

SCIENTIFIC COMMITTEE.—Present: Mr. McLachlan (in the chair) Mr. Blandford, Dr. Müller, Mr. Wilson, Mr. Morris, and Rev. G. Henslow (Hon. Sec.).

Acacia Seyal, stipules.—Mr. Henslow showed a specimen of the stipules of this Central and North African species, having globular bases, about the size of large cob-nuts, terminating with slender points, 2 inches in length. They had been perforated and inhabited in all probability by ants. A discussion arose as to the possibly hereditary character of the abnormal size of the stipules of this and other species—*e.g.*, of *A. sphærocephala*, the "Bull's horn" Thorn (as compared with the needle-like stipules of some Australian species) even when cultivated in England and in the absence of ants. It is well known that the presence of the ants causes an increase of the growth of the stipules, although they hollow them out and consume the pith as food. It is, however, the opinion of Dr. Beccari and M. Treub, who have studied many "ant-plants," that the comparatively large size of the stipules, even before they are attacked by ants, is due to the hereditary effects of the irritations set up in previous generations of trees ("Malesia" ii., and "Ann. Jard. Bot. Buit." iii., p. 129). An interesting description of *A. sphærocephala*, &c., is given in Belt's "Naturalist in Nicaragua," p. 218.

Lilium Martagon, fasciated.—Mr. Elwes sent a large fasciated stem of this species, in which this abnormality had not been previously observed. It is not uncommon in other species. It bore at least 100 flowers on the flattened stem, which was about 2 inches across.

Oak-staves, perforated.—Mr. Morris exhibited portions of staves of beer barrels, made in England in 1889, and shipped to Aden in March, 1890, from the Indian store department. Of a hundred barrels nearly every one was found to leak, holes having been bored into the wood by the grub of some beetle. It was referred to Mr. Blandford for examination; but in the absence of all specimens of the creature, and any details in the history of the case, as—*e.g.*, whence the beetles could be derived, it is somewhat difficult to suggest a remedy.

Carnations attacked by Wireworm (?).—Samples of plants and grubs were received from R.H.S. gardens at Chiswick. It was suggested by Mr. Barron that the creature might have been introduced in the "peat moss" (employed as bedding for horses) used as manure. It appeared to be a species of *Tipula*. Mr. Blandford undertook to make a further examination. Mr. Morris and Mr. Wilks remarked that Carnations were much destroyed in a similar manner both at Kew and Shirley. Mr. Henslow remarked upon the wonderfully efficacious effect of gas lime in destroying wireworms. Thinly spread over the ground and dug-in, a plot where previously not a Cabbage could be grown in his garden has borne excellent crops for several years since.

Gladiolus with Unsymmetrical Flowers.—Mr. Henslow showed a spray in which the two uppermost flowers were normal, the two lower reversed in position, having the stamens and style declinate, while one flower had them situated laterally. The streaked petals corresponded with the positions of the stamens in each case. The tubes did not appear to be twisted in any way. As the style and stigmas were altered in correlation to the stamens, it would probably not affect the fertilisation by insects, the latter being simply dusted with pollen in a different part of the body from usual. Mr. Morris remarked that he had observed similar alterations in the flowers of the *Gladiolus* at Kew.

Foliage with Foliaceous Appendages.—Mr. Henslow exhibited specimens (1) of leaves of *Acalypha cremurus* with narrow wing-like excrescence on the ribs and veins of the upper surface. Dr. Müller has described this peculiarity as a true specific character in this plant. 2, *Aristolochia siphon*, with apparent outgrowths on the lower surface. These appeared to be due to cracks in the leaf when young; a portion of the leaf then protrudes below, when adhesion again takes place. 3, *Arum maculatum* with a foliaceous appendage at the base of the blade. 4, Several specimens of Cabbage leaves with wing-like appendages to the ribs, as well as tubular and funnel-like appendages. Mr. Henslow pointed out the similarity between these foliar excrescences and many which occur on petals, especially *Gloxinias* (exhibited), *Primroses*, *Orchids*, and in the "crested" *Cyclamen*. In all cases they appear to be due to hypertrophy, and are a means of disposing of excess of nutriment, the foliar excrescences being correlated to the chorisis or branching of the fibro-vascular cords. In a monstrous form of *Mignonette*, described by the late Professor J. S. Henslow in 1833,

the ovules partook of identically the same character as the excrescences on the Cabbage leaves—viz., cups, funnel-shaped structures and foliar expansions. Such appears to explain the origin of ovules as being the outgrowths from the hypertrophied margins (placentas) of carpellary leaves.

Plants Exhibited.—Sir Trevor Lawrence sent *Bulbophyllum grandiflorum* and *Sarcopodium psittacoglossum*, for which a botanical certificate was unanimously awarded. A liliaceous plant with dark coloured flowers and two new species of Lily were sent by Mr. Ware. They were forwarded to Kew to be named.

HINTS ON FORCING STRAWBERRIES.

IN some gardens Strawberries must be forced in vineries and Peach houses, whilst in others houses are specially provided. Fruit is required usually from February to June, but the great months for forced Strawberries are April and May. Varieties.—1, To start before the new year for the earliest crops, La Grosse Sucrée and Vicomtesse Hericart de Thury. 2, To start at the new year for second early crops, Auguste Nicaise and Laxton's Noble. 3, To start by the middle of February for midseason crops, Sir Joseph Paxton and Sir Charles Napier. 4, To start in early March for late crops, British Queen and Dr. Hogg. For affording a full supply for a large establishment from March to June inclusive, I find 1000 plants of Sir Joseph Paxton, and 500 of each of those named necessary. That is a minimum, as besides those strong contingents are also grown Sir Harry, President, and James Veitch.

Sir Joseph Paxton has a bad character for mildew; it always redereed us excellent service. Sir Charles Napier is considered by some too "sharp." A substitute for Sir Joseph Paxton is provided in Auguste Nicaise, and for Sir Charles Napier in Noble. Auguste Nicaise is the brighter fruit, but both crop freely, and are fair in quality.

Selecting Runners.—Never take a runner off a non-fruiting plant, and always select the first runners. Old runners, as a rule, are late and weak.

Rooting Runners.—The best methods are two—viz., 1, In 3-inch pots firmly filled with good soil, in inverted turves of about 3 inches square, and a little less depth, and when well rooted transfer to the fruiting pots. 2, Layer at once into the fruiting pots. I prefer the former plan. The pots or turves being placed in suitable position half plunged or sunk, make an indent in the centre about half an inch deep, place the base of the runner therein, secure with a peg—galvanised wire 20 gauge, cut into 3-inch lengths, doubled similar to a hair pin, are best—and supply water at once, afterwards giving careful attention to induce the runners to root quickly. If layered in the fruiting pots leave them attached to the parent plants until thoroughly established; those in small pots should be detached as soon as the pots are well filled with roots, and be placed on moist ashes in a shady place for a few days. Those layered on turves may be treated similarly, only as they do not make as much leaf growth, being harder with more fibrous roots, they may be transferred to the fruiting pots at once—that is, after they become well rooted. These invariably develop good crowns, and crop as well or better than those with a larger display of leaves.

Pots.—For early forcing 5-inch pots are ample; 6-inch pots are a useful size for successional or late plants. Ordinarily 7-inch pots are best for late forcing, as the plants have more time to make roots and perfect a good crown. Some growers place two plants in 8-inch pots, and three in 9-inch pots. The pots should be clean inside and out. Hard are preferable to soft pots, as the former keep clean longer.

Compost.—Turfy loam, rather strong and well filled with fibre, should form the staple. It should only have been laid up sufficiently long to destroy the herbage. This will be rich enough without manure unless poor, when a fifth part horse manure may be added; but rich soil only favours a luxuriant crop of leaves. Break the turf up with the hand, or chop it into pieces of an inch or two square; add to every three bushels a quart each dry wood ashes, soot, and dissolved bone (superphosphate). Have the soil moderately dry. When wet it hinders the work, forms a soapy mass, hardening afterwards into brick-like substance, shrinking from the sides of the pots.

Potting.—The hole in the pots must be three-quarters inch in diameter; less is useless, larger unnecessary. One large crock, so as to extend over the hole, and concave side downwards, with three or four larger pieces of a little less size to form a layer over it, and then a thin layer of small pieces, sifted so as to remove the dust, or better a thin layer of steamed half-inch bones; 1 inch to 1½ inch depth for the smaller size of pot, and 1½ inch for the larger size, is ample drainage. An oyster shell concave side down over the hole, some crushed bones (steamed) make capital drainage.

Place enough of the rough compost in the pots, and ram it firmly with a potting stick about 9 inches long, having the soil half to three-quarters of an inch below the rim.

Situation for the Plants.—Place them on a layer of ashes 6 to 9 inches thick, fully exposed to the sun. Shelter from winds, afforded by hedges or walls, not so near as to shade, is desirable. If the plants stand just clear it will be sufficient at first, but in about three weeks' time from potting they will require placing a foot or 18 inches apart.

Watering.—When the soil is becoming dry, and before the foliage flags, a thorough supply of water must be given. Examine them for this purpose frequently. Syringe the foliage in the evening of hot days. Remove all runners as soon as they show a joint. Weeds must not be tolerated; but keep the soil free from moss.

Removing Side Crowns.—Some varieties, especially Vicomtesse

Hericart de Thury, form side crowns, and unless they are removed the central one is weakened. Take care in removing them not to injure the central bud or damage the leaves. All varieties are the best looked over not later than the early part of September where fine fruits are desired.

Wintering.—By the middle of October the early varieties must be placed in pits or frames, and plunged to the rims of the pots. The lights need only be used in case of heavy rains, then tilted top and bottom, and in case of snow and frost. Whenever the temperature is about 35° outside withdraw the lights. All that is wanted is rest without heavy rains, snow, and severe frosts. Midseason plants should be plunged to the rim in ashes in a sheltered situation. In very severe weather protect them with a little dry soft straw. Late plants require similar treatment to the last named. All plants must be in their winter quarters before severe weather. Letting the roots get frozen in the pots is only courting disaster.

TREATMENT OF FRUITING STRAWBERRIES.

Suitable Structures.—These should be light, well ventilated, having sufficient hot-water pipes to maintain a temperature of 70° to 75° without hard firing. They must be provided with stages or shelves to keep the plants near the glass. The foliage can hardly be too near the glass without touching it, but they will not take harm at a distance of 3 feet provided they have unobstructed light. Air is essential, and if it reach the plants below or above them it is preferable to coming directly upon them sideways. Shelves in vineries and Peach houses are not the best of places, but much can be effected by such means by removing the plants as the structures accord in temperature, &c., with the requirements of the Strawberries in their different stages. To force Strawberries well two structures are required, so that a succession can be maintained, as up to setting they do not require a high temperature, but after the fruit is fairly swelling they need a good heat with corresponding moisture, which can hardly be accorded to Peach houses and vineries without prejudice to the Peaches and Grapes.

Preparing for Forcing.—A clean house is necessary. The glass clear, the woodwork well cleansed or painted, the brickwork lime-washed. Plants for starting in November for the earliest crops must be in the frames early in October, and as they will be removed by the middle of November others can take their place for starting later. It is well in all cases to have the plants a month or six weeks in frames preparatory to their being introduced to artificial heat.

Remove decayed leaves, avoiding close trimming, and retain all green foliage. Rectify the drainage if defective. If worms are in the soil stop the base of the pots with clay, and soak with lime water. The worms will be expelled, and the drainage can then be put right. Wash the pots, surface dress the soil with fresh horse manure rubbed through a sieve. Turfy loam being similarly treated, with a quart of Thomson's manure added to every bushel is first rate. The plants must have room on the shelves for the expansion of their foliage without crowding.

Temperature.—Commence with 45° to 50° as the artificial temperature. Raise it in the course of a fortnight to 50° to 55° by artificial means, the former the night, the latter the day temperature. Let it fall 5° on cold nights, but get the heat up to the artificial day temperature by 8 A.M., or an hour after daybreak, or if cold and dull 5° less may be allowed through the day. With sun allow an advance to 60° on cloudy days, with occasional clear intervals, 65° with about as much sun as cloud alternating, and to 70° with a clear sky, in all cases closing so early as to advance 5° on temperatures indicated. When the fruit is set slightly increase the temperature, advancing 5° in the course of a week, and 5° more in the course of a fortnight, which will bring the night temperature up to 60° or 65°, and the fruit will then be advanced in swelling, and bear a much higher temperature. This stage of the fruit being reached, and the crop having to be finished in the same house, the night temperature should be kept at 65°, falling 5° on cold nights, and ruling 5° higher on warm nights, 70° to 75° by day from fire heat, and 80° to 90° through the day from sun heat. This can be continued until the fruit begins to ripen, when a temperature of 60° to 65° at night and 70° to 75° by day will be all that is necessary, admitting air more liberally. The fruit is found to have better flavour than when ripened in a hot and moist atmosphere.

Ventilation.—Until growth is commencing little air will be required except when the temperature reaches the day limit. Closing should be effected sufficiently early to raise the heat 5° above the maximum day temperature. Ventilate slightly at the top before nightfall, and let it remain on constantly except when the house is closed in the afternoon. This procedure is to be adopted throughout the whole of the forcing period with but two exceptions—when the plants are flowering and when the fruit is ripening. At those times a circulation of air should be maintained constantly.

Watering.—The plants should be attended to once a day in the early stages of growth, two or three times a day when they are in free growth and their crop swelling. After the fruit begins to ripen water should only be given to prevent the foliage flagging. All water used should be tepid, a few degrees warmer than the house.

Syringing.—Syringe the plants morning and afternoon up to the flowering period, the exceptions are when the weather is cold and dull and the foliage does not become fairly dry before night. A gentle even sprinkling is best. In dull weather damping available surfaces in the morning and afternoon will be sufficient. Avoid saturating the flowers, ceasing when the flowers are fully expanded. After flowering have recourse to syringing again in the morning and afternoon, discontinuing it as soon as the fruit gives the least indications of ripening. Water on

the fruit after it changes colour causes it to be spotted, and the least speck ruins a large fruit.

Liquid manure may be given every alternate watering until the fruit commences ripening, when it must be discontinued. The drainings of stables, farm or dung yards diluted with six times the bulk of water are good, but their great drawback is their uncertain strength. A peck of sheep manure to 30 gallons of water makes an excellent liquid manure, and so does cow and fowl manure. Guano 1 lb. to 20 gallons of water is handy and suitable. The liquid in all cases must equal in temperature that in which the plants are growing, and it must be kept from the foliage and fruit.

Flowering.—If placed in a strong heat at once the flowers may unfold, but the stamens generally turn black or shrivel, and the pistils also become black or abortive. This sometimes is a consequence of immature crowns, but it often arises from bringing on the plants too rapidly. A light sprinkling may assist in liberating the pollen, but it is best omitted. Ventilate early and freely; avoid sudden fluctuations or depressions of temperature, cold currents of air, and a moist confined atmosphere. Brush the flowers lightly on a fine day when the pollen is ripe with a camel's-hair brush, a bunch of feathers, or a plume of Pampas Grass. Air in motion will do it just as well, and a sharp gentle rapping on the lower part of the trusses is good.

Thinning the Flowers and Fruit.—This is a necessary and not difficult matter, as the trusses have all the best flowers at the lower part, and when the trusses have about half their flowers expanded the buds on the upper part may be removed. La Grosse Sucrée does not give half the flowers of Vicomtesse Hericart de Thury, and it would be unwise to thin the flowers of the former as much as the latter. Half a dozen fruits on La Grosse Sucrée correspond to nine or a dozen on Vicomtesse Hericart de Thury. A dozen fruit is a full crop on the former, two dozen on the latter. This, however, is not an average. Six good fruit on La Grosse Sucrée and a dozen on Vicomtesse Hericart de Thury are nearer the mark than the larger or double number, and the six or twelve may be quite as heavy as the dozen or two respectively. A dozen fruits on Auguste Nicaise or Noble will swell to a size and weigh equal to a half dozen of Sir Joseph Paxton or President. The crown or king fruit always takes the lead, and if the fruits are wanted these only should be retained.

Supporting the Fruit.—Forked twigs of Birch, Hazel, Hornbeam, &c., form the best supports for the fruit, cutting them into suitable lengths, the lower end pointed and thrust into the soil at such an angle and position as will best suit the trusses and support the fruit above the foliage or clear of the pot. The trusses or individual fruits have their stems placed in the fork, so that the fruit will be clear of the stick, pot, and foliage. Small stakes, and the fruit stem secured to them with string, will be found useful in the case of large fruit which is much more liable to damage than medium or small fruit.

Gathering the Fruit.—Morning should as far as practicable be the time of gathering Strawberries, and the fruit should be just ripe, which requires some experience and judgment with different varieties. Always gather with sufficient stem to hold the fruit by.

Retarding the Fruit.—At times the fruit comes on too rapidly, and it is necessary to keep it back in order to maintain the succession, or reserve it for particular occasion. It is no use, however, striving to retard the fruit before it is swelled and well advanced in colour, then much may be done by turning the fruit from the sun, or removing the plants to a north house, where plenty of air can be admitted, and with all the light possible, without sun, the fruit will ripen perfectly; indeed, sun-heated fruits when the plants lack moisture at the roots, are never so juicy as those not sun-dried, nor so pleasing in flavour. A single thickness of tiffany shading will prevent the fruit ripening so fast, the temperature being kept at 60° to 65°, and the atmosphere well ventilated. The fruit may be kept on the plants in a cool airy fruit room when it is ripe, and have the shutters down so as to admit light. In such position it will keep a few days.

Maintaining the Succession.—Plants introduced about the middle of November will afford fruit from the middle of February to March, and to maintain a regular succession until the open air fruit comes in plants must be introduced every three weeks up to early May. Orchard houses and fruit wall cases are invaluable for affording late supplies.

Insects.—Caterpillars are sometimes troublesome. They are best removed by hand-picking. Aphides attacking plants outdoors may be destroyed by watering or sprinkling them with tobacco juice diluted with six times the quantity of water. Thrips and red spider will be killed by dipping the infested leaves in a solution of softsoap, 2 ozs. to the gallon of water. A grub gets into the crown and eats out the heart bud, the plants consequently are blind. Examination of the plants in late summer will mostly be rewarded by finding the pest about the base of the crown. Aphides infest the scales of the crowns when the plants are in frames. Sprinkling with the tobacco water is the best cure. Inside the forcing structures aphides multiply rapidly on the swelling crown and infest the trusses as soon as they appear. A sharp look-out should be kept for them. Fumigate thoroughly, and repeat if necessary until the flowers are showing colour. After the fruit is set fumigation must be done very moderately and carefully, as the fruit will be so dried or injured that it will not swell freely. The tender foliage also is injured by excess of tobacco smoke. Red spider will not trouble if syringing be attended to. If it obtain a footing on the foliage sponging with soapy water is the best remedy.

Results.—Fruit from mid-February to mid-June certain. La Grosse Sucrée and Vicomtesse Hericart de Thury, giving fruit of half to one

ounce each, 1 oz. to 1½ oz. is the top weight of those kinds, and half a pound a fair average weight of the produce per plant. Sir Joseph Paxton and President in their finest examples reach 1½ to 2 ozs., and give as an average ¾ lb. per plant, Sir Joseph Paxton being the heavier. Sir Charles Napier will afford fruit of similar size to those last named and heavier if well thinned, and 1 lb. weight per plant, and in the same category as to size may be placed British Queen and Dr. Hogg, but a lessened weight per plant by a ¼ lb., but then the quality tells, or ought, only buyers will not see it. Auguste Nicaise and Noble reach 2 ozs. per fruit individually, and 2 lbs. per plant respectively occasionally, but a fair average for those is 1 oz. per fruit and 1 lb. per plant. Those are not sensational weights neither of individual fruit or plant, but they are such as attend good culture, and cannot be attained without high aim. Under common culture the results are about half.—G. ABBEY.

HORTICULTURAL SHOWS.

WINCHESTER.

THIS was held in conjunction with the Royal Counties Agricultural Show in the ancient city on the 8th inst. Taking the Exhibition all round it was considered by far the best that has been held. This was largely due to the fact that this Society is managed so well by the Committee, of which Mr. F. W. Flight is Chairman, and a thorough enthusiast in gardening, ably assisted by Mr. Chaloner Shenton, the courteous and industrious Honorary Secretary.

ROSES.—Considering the unfavourable state of the weather lately experienced it was surprising to see how well these were presented. They were not large, but of good form, colour, and freshness, making a great display. The principal class was for forty-eight distinct single trusses. The display was a grand one. After a close inspection the Judges awarded premier honours to Mr. Benjamin R. Cant, Colchester, the blooms being rather larger and more solid than those in the second prize stand, which, however, were rather more highly coloured. The following were the varieties:—Back row: Thomas Mills, Dupuy Jamain, especially fine; Madame Eugène Verdier, Camille Bernardin, Duchesse de Morny, Marie Baumann, Madame Isaac Pereire, Merveille de Lyon, Susanne Marie Rodocanachi, Earl of Dufferin, very fine; Madame C. Vigneaux, Annie Wood, extra; Edward Herve, Ulrich Brunner, La France, and Alfred Colomb. Middle row: Marshall P. Wilder, Her Majesty, Sultan of Zanzibar, François Michelin, Madame Prosper Laugier, Marie Verdier, Sir Rowland Hill, Earl of Pembroke, very full; Prince Camille de Rohan, Niphetos, Duke of Edinburgh, Mrs. John Laing, Général Jacqueminot, Madame Gabriel Luizet, Victor Hugo, and Baroness Rothschild. Front row: Charles Lefebvre, Le Havre, neat; Madame Bravy, Eclair, Souvenir d'un Ami, Horace Vernet, Madame de Watteville, Lady Helen Stewart, John Hopper, Beauty of Waltham, grand; Comtesse de Serenye, Maréchal Vaillant, Souvenir de la Malmaison, Prince Arthur, Souvenir d'Elise, A. K. Williams, rich. Mr. Frank Cant was an extremely close second, his most noteworthy blooms being Général Jacqueminot, Prince Arthur, Niphetos, The Bride, Mrs. J. Laing, Earl of Dufferin, and Beauty of Waltham. For twenty-four distinct trebles Mr. Frank turned the tables on his rival somewhat easily by winning with blooms especially bright in colour and of good form, although not large. Messrs. Keynes, Williams & Co., Salisbury, were third with a good collection.

For eighteen Tea or Noisette varieties the first prize was adjudged to Mr. B. R. Cant for rather small blooms of the following:—Catherine Mermet, good; Innocente Pirola, Jules Finger, Madame Margottin, Niphetos, Souvenir d'un Ami, Marie Van Houtte, Comtesse de Nadaillac, Madame Cusin, Souvenir d'Elise, Madame Lambard, fine; Madame de Watteville, The Bride, Luciole, Madame Hoste, Francis Kruger, Devoniansis, and Maréchal Niel. Mr. Frank Cant followed, Innocente Pirola, Anna Ollivier, The Bride, and Madame Lambard being the best. Messrs. Keynes, Williams & Co., were third. The prizes went in the same order for trebles of twelve varieties of Teas or Noisettes.

In the class for twenty-four Roses, distinct, Messrs. Keynes, Williams and Co. were easily first, staging grand blooms in the following order:—Back row: La France, Madame Victor Verdier, Madame Eugène Verdier, full; Senateur Vaisse, Mrs. J. Laing, Louis Van Houtte, François Michelin, and Earl of Dufferin. Middle row: A. K. Williams, Ulrich Brunner, full and rich; Marshall Wilder, good; Catherine Mermet, Etienne Levet, Her Majesty, Madame C. Wood, and Merveille de Lyon. Front row: Marie Verdier, Beauty of Waltham, Alphonse Souper, Charles Lefebvre, Madame de Watteville, Marshall P. Wilder, The Bride, and Heinrich Schultheis. Second, Messrs. Perkins & Son, Coventry, with small but neat and fresh blooms. Mr. E. Hillier, Winchester, was a good third.

For twelve blooms of any dark variety of Hybrid Perpetual there were six entries, a stand of A. K. Williams from Messrs. Perkins and Sons being much the best, medium size, wonderfully fresh, and good in colour, with small but exquisitely coloured blooms of Prince Arthur. Mr. B. R. Cant took second honours, Messrs. Keynes being third with Ulrich Brunner. For the same number of blooms of any light variety Mr. Frank Cant secured first honours with fresh well coloured examples of Mrs. J. Laing; Mr. B. R. Cant second with Merveille de Lyon. For twelve blooms of any one variety of Tea or Noisette Mr. B. R. Cant was first with Madame de Watteville, Messrs. Keynes second with The Bride.

The following classes, not open to nurserymen, made a capital show. Some excellent blooms were staged. For twenty-four distinct three

competed. P. Burnand, Esq., Wray Park, Reigate, was first with medium sized well shaped flowers. F. W. Flight, Esq. (Mr. W. Neville, gardener), was a close second. For twelve trebles the Rev. C. Eddy, Brawby Rectory, Basingstoke, was easily first, Mr. Neville second, and Mr. R. E. West, Reigate, third. Mr. Neville easily secured leading honours for twelve Teas or Noisettes, distinct, with neat fresh blooms of medium size, also for twelve distinct Roses. Mr. Chaloner Shenton was second, both staging well.

PLANTS.—These were staged in moderately large numbers, and of fairly good quality. For twelve stove or greenhouse, distinct, six to be in bloom, the first prize was somewhat easily secured by Mr. E. Wills, gardener to Mrs. Pearce, The Firs, Bassett, Southampton, with well grown healthy specimens, *Cycas revoluta*, *Croton Princess*, *Kentias Fosteriana* and *Belmoreana*, *Clerodendron Balfourianum*, and *Kalosanthes coccinea* being the most noteworthy. Mr. J. Currey, gardener to Colonel Pepper, Milford Hall, Salisbury, second. In the class for eight plants the position of these two exhibitors was reversed, both staging creditably. Ferns were well shown by Mr. W. Peel, gardener to Miss Todd, Sidford Lodge, Shirley, who took first prize. Begonias, *Coleus*, *Geraniums*, and *Gloxinias* were in all classes represented by meritorious specimens.

GROUPS.—These were amply provided for in the schedule. In the open class there were only two exhibitors, Mr. J. Currey and Mr. E. Wills, who secured the prizes in the order named. In the second class, nurserymen excluded, there were seven competitors. Mr. E. Carr, gardener to R. W. Gillett, Esq., Fair Oak Lodge, Bishopstoke, secured first honours with a bright arrangement, in which were a good number of Orchids. Mr. Thos. Lowes, gardener to F. C. Berch, Esq., Clovelly, Winchester, second; and Mr. E. Wills third. Several of these groups were much too packed, and the plants in some of them weak.

Stands of cut flowers and bouquets made a good show. For the best dressed single vase Miss Flight secured the coveted award with a light arrangement in which were several good blooms of *Cattleyas*, that imparted richness to the base. Miss J. L. Smith, The Deane, Sparsholt, was second. For a similar dressed vase, open to ladies only, Miss J. L. Smith and Miss Agnes Flight were first and second respectively, the former having a pretty arrangement of white *Marguerites* with which the pink tinted foliage of the young *Maple* shoots contrasted well. Messrs. Perkins & Sons secured leading honours with both ball and bridal bouquets, Mr. E. Hillier second. Special prizes were offered by Mr. T. S. Ware for eighteen bunches of hardy perennials; here Mr. Neville was an easy first with a well arranged stand.

FRUIT.—This made a good display and was generally of excellent quality. For a collection of six distinct dishes Mr. G. A. Inglefield, gardener to Sir J. Kelk, Bart., Tedworth, Marlborough, secured the premier position with well coloured even bunches of Black Hamburgh and fairly good Muscat of Alexandria Grapes, excellent Royal George Peaches, Hero of Lockinge Melon, and splendid President Strawberries. Mr. J. Budd, gardener to F. Dalgety, Esq., Lockerby Hall, Romsey, was an extremely close second. Grapes in three bunches of black were well staged by four exhibitors. Mr. N. Molyneux, gardener to J. C. Garnier, Esq., Rooksbury Park, Wickham, Fareham, easily secured first honours with well shaped bunches of Black Hamburgh (Mill Hill) and extra fine berries of good colour. Mr. F. Cawte, gardener to W. Cotesworth, Esq., Abbots Worthy House, Winchester, was second with the same variety in good order. He also secured the leading position in the class for three white bunches with extra fine Foster's Seedling, Mr. N. Molyneux closely following with good Buckland Sweetwater. Melons made a good show, Mr. Inglefield secured first honours with Hero of Lockinge, Mr. Budd second with same variety. Splendid President and Sir Joseph Paxton Strawberries were staged by Mr. Inglefield in the class for two dishes Mr. Thos. Lownes following with the last named variety, and Sir C. Napier with extra finely coloured Royal George Peaches. Mr. Inglefield was an easy first in the class for six fruits, Mr. Allen following.

VEGETABLES.—These were staged in large numbers, and of excellent quality, as many as ten exhibitors entering for the prizes given by Messrs. Sutton for six distinct kinds. Mr. J. Allen was awarded premier honours, followed by Mr. R. Lye, gardener to W. H. Kingsmill, Esq., Sydmonton Court. For the best nine Tomatoes in a special class (also provided by Messrs. Sutton) Mr. Chaloner Shenton secured the first prize with fine fruits of Perfection; Mr. J. Allen second; he also took first prize for Sutton's Improved Telegraph Cucumber in a special class for that sort. Mr. B. Ladhams, florist, Shirley, Southampton, staged (not for competition) some fine herbaceous cut flowers, which made an imposing display.

WIMBLEDON.

HELD in the beautiful grounds of Wimbledon House (Sir Henry Peck's), on one of the most miserable of days, the 9th inst., we fear this creditable Exhibition could not be adequately attended. The adverse weather also naturally limited the display of Roses, but surprisingly good stands were forthcoming. There was a good display of stove and greenhouse plants, some beautiful groups, excellent fruit, and splendid vegetables.

ROSES.—The special prizes offered for twenty-four blooms were won by J. Bateman, Esq., Rose Vale, Highgate, Mr. C. Gibson, gardener to J. Wormald, Esq., Marden Park, and Mr. Ware, gardener to G. Walters, Esq., Woodhayes, in the order named, all staging well. Mr. Bateman's blooms were wonderfully clean, firm, and fresh, though not large. His varieties comprised Ulrich Brunner, Her Majesty, A. K. Williams, Dupuy Jamain, Etienne Levet, Madame Charles Wood, Madame Norman Neruda, Baronne de Rothschild, Earl of Dufferin, Marie Verdier, Beauty

of Waltham, Mrs. John Laing, L. Van Houtte, Marie Finger, Duke of Albany, Heinrich Schultheis, Marie Rady, Madame G. Luizet, Charles Lefebvre, Duke of Wellington, La France, and E. Y. Teas. Mr. Bateman also easily won the chief prize in the amateurs' class for twelve Roses with similarly good blooms, W. R. Faulkner, Esq., being second with very fresh examples, but a little too "assisted" in opening.

In another class for twelve Roses the prizes were adjudged to Mr. C. Gibson, Mr. W. R. Faulkner, and Mr. H. Alderman, gardener to G. Hatfield, Esq., Morden Hall, respectively. The varieties in the first prize stand were Paul Neyron, Ulrich Brunner, Merveille de Lyon, Pauline Talabot, Comtesse d'Oxford, Marie Baumann, Général Jacqueminot, Sénateur Vaisse, Prince Camille de Rohan, A. K. Williams, and Rubens, all very fresh. Messrs. G. T. Harman, J. W. Wright, and W. R. Faulkner were the prizewinners in other classes. An extensive and excellent collection of Roses were sent by Messrs. James Veitch and Sons, not for competition, and very highly commended.

PLANTS.—The best specimen stove and greenhouse plants were staged by Mr. J. Bentley, gardener to Sir T. Gabriel, and he also secured the first prizes for Ferns and Caladiums; Mr. Ware second. Begonias were well exhibited by Messrs. Methven, Thornton, and Law, and *Gloxinias* by Messrs. Bradford, Bentley, and Curtis, the respective prize-winners. Mr. H. Alderman had the best ornamental foliage plants. Some very beautiful groups were arranged, notably by Mr. Ware, gardener to W. Walters, Esq., who secured the chief prize in one section, and Mr. E. Newell, gardener to Sir E. Saunders, who took the lead in the other. Mr. Ware employed *Caladium argyrites* with great effect in his undergrowth of Ferns, and Palms, *Amaryllises*, *Liliums*, and *Gladiolus* The Bride were pleasingly associated. *Amaryllises* were also very fine in Mr. Newell's group in which well grown Begonias, *Gloxinias*, and Ferns were tastefully disposed. The margins were neatly formed with *Isolepis*, *Panicum*, and *Selaginellas*, all very fresh, and no pots visible. Messrs. Law and Methven were also successful exhibitors, and their contributions would have won higher positions at many shows.

FRUIT.—This was generally of good average quality, and the competition close. In a collection of this dish Mr. C. Gibson just managed to "creep in first" with good Black Hamburgh and Muscat of Alexandria Grapes, Melon, Cherries, Strawberries, and Peaches; Mr. Waite, Glenleigh, being an extremely close second, and Mr. Alderman third. The two first-named exhibitors were placed in the same order with black Grapes, and Messrs. Selden and Bentley with white.

VEGETABLES.—There was splendid competition for the prizes offered by Messrs. Sutton & Sons and Jas. Carter & Co., Messrs. Waite and Lyne being first and second in both classes, Mr. Gibson third in the former, and Mr. Coll in the latter. The Society's prizes were well won by Messrs. Law, Waite, Chandler, Bentley, first prize winners, followed by Messrs. Harman, Coll, Day, and Lyne. It is not often that finer produce is seen than was exhibited on the occasion.

Messrs. D. Thomson & Sons contributed powerfully to the Exhibition by a great assortment of hardy herbaceous flowers and beautiful baskets of flowers, bouquets, and wreaths—a most meritorious display. Messrs. J. Laing & Sons exhibited a superb group of plants and Begonias, and Mr. Peed had also an effective display.

Dr. George Walker and Mr. Lyne, the chief officials, had a smile for everybody, and it would be interesting to know how much rain would be needed to damp their ardour in the management of a show.

TEDDINGTON.—JULY 9TH.

THE Teddington Royal Horticultural Society succeeded in obtaining a highly satisfactory Exhibition last week in the grounds attached to the residence of F. Houghton, Esq., Park Road; but the weather could scarcely have been worse for a July day. It commenced raining about noon, and continued with deplorable persistency throughout the greater part of the day, effectually deterring the majority of intending visitors from assembling in the Show ground. Misfortunes like these occur to all societies at times, and the present season has so seriously decreased the gate receipts at many a show that their financial resources will be sadly taxed unless there is a substantial balance at command. This is too seldom the case, and it is wise where possible to make some provision for the proverbial "rainy day." Perhaps the best way is by the sale of tickets before the show day, and a few of the most prosperous societies have by this plan repeatedly saved themselves from heavy losses, or even probable bankruptcy. Another method, which is, however, open to several objections, is to prolong the time of the show to two or three days. Still, this has in some notable instances enabled the societies to avoid financial failure, and it is worth consideration. The great difficulty is where cut flowers form a large portion of the show, as by the close of the first day these are seldom worth looking at, and they would have a sorry appearance the next day. Plants and fruit, however, might always be safely left for a couple of days at this time of year, and these, with vegetables, constitute the greater portion of summer shows when the Roses are past.

Nineteen annual exhibitions have been held in Teddington, and for some years they have been distinguished by the freshness and good quality of the exhibits. There has indeed been a steady advance, and within the last ten years the improvement has been most marked. The Society has done good work in the district in promoting a love of horticulture. Considerable amateur enthusiasm has been aroused, and the support thus afforded is amply deserved. Such gentlemen as Messrs. W. Furze, W. Howard, and E. H. Douet have rendered invaluable service in the past, and the Society's future success will depend greatly upon a continuation of their exertions. A strong and practical Committee has been formed, with good workers in Messrs. Davies, Anderson, Coombs,

and others, while the duties of Honorary Secretary are performed in a most satisfactory manner by Mr. Alfred R. Simmonds, who devotes considerable time to the Society's business.

Three large tents were occupied with plants, flowers, and vegetables, the last named being very strongly represented from amateurs, gardeners, and cottagers. Near entrance of the plant tent was a grand group of Orchids from Mr. Osborn, gardener to W. Howard, Esq., The Grove, Teddington, amongst the plants shown being *Odontoglossum vexillarium*, *Cattleya Warneri*, aurea and *Sanderiana*, with *Oncidium macranthum*, and brightly flowered plants of *Epidendrum vitellinum*. The plants were in excellent health and effectively arranged. For a group of plants, Mr. Sutton, gardener to J. S. Sassoon, Esq., Ashley Park, Walton, was awarded first prize for most tasteful contributions, well furnished, light, and quite free from formality. Mr. Fordham, The Nurseries, Twickenham, was a good second, but his group was slightly too flat in the centre. In the class for a smaller group (9 feet by 6 feet), Mr. J. Reeves, Oatlands Park Gardens, was the only exhibitor, gaining first prize for an arrangement that would not have been easily surpassed. With six stove and greenhouse plants, and the same number of exotic Ferns, Mr. Reeves was also first for capital specimens. Mr. G. Watts, gardener to H. Little, Esq., Twickenham, was first for four Orchids, and secured similar honours for Tuberous Begonias, but in the latter class, Mr. Coombs, gardener to W. Fuze, Esq., Roselands, Teddington, who had smaller plants, but excellent varieties. Fine-foilage plants came from Mr. Reed, gardener to G. Pettit, Esq., Oatlands Park, and Mr. Sutton in the class for six, and the contest was a close one, being decided in favour of the former by a few points. With three fine-foilage plants, Mr. J. G. Burton, Cambridge House Gardens, Twickenham; Mr. T. Gregory, gardener to J. F. Weymouth, Esq., Bushey Nook, Teddington; and Mr. Reeves were the prizetakers. Achimenes, Caladiums, and Coleuses were represented by admirably grown plants, and the prizes went to Messrs. Gregory, Coombs, Sutton, and Piper. In this tent also were fine groups of plants from Messrs. J. Laing & Sons, Forest Hill, and Puttock & Sheppard, Kingston.

Cut flowers comprised Roses, hardy flowers, Pelargoniums, and Gloxinias; while the floral decorations comprised stands of various forms, baskets of Roses, bouquets, buttonholes, sprays, &c. In this department much taste is displayed, and several contributions were of unusual excellence. The Roses were fresh in the leading stands, and the cut flowers generally possessed much merit. The fruit was also arranged in the same tent, and comprised some creditable specimens of Grapes, Pines, Peaches, Nectarines, and Melons. Mr. Osman, gardener to J. Baker, Esq., Ottershaw Park, Mr. W. Bates, Mr. Waite, and Mr. Reed were the chief exhibitors. As already noted, vegetables were remarkably good, and the entries numerous in nearly every class.

TUNBRIDGE WELLS.

THE thirty-second annual Show of this Society was held in the Spa Grounds on the 9th inst. by kind permission of Mr. Dicks. The weather was very much against a financial success, rain falling incessantly throughout the afternoon and evening. Those who braved the storm were, however, rewarded with one of the finest exhibitions ever held under the auspices of this old established Society. The Committee may be commended for the liberal schedule issued, and it is unfortunate that their generosity did not meet with better support on the part of visitors. The tent in which were arranged the cut flowers and fruit proved the centre of attraction throughout in spite of the grand display of specimen plants and groups arranged by Mr. Offer of Handcross Park, Mr. S. Portnell, gardener to Sir A. Ashburton, Mr. S. Pope, gardener to J. Barrow, Esq., Langton, Mons. L. Dupond, gardener to J. Allchin, Esq., and many other well known plant growers.

In the open class for eight stove and greenhouse plants Mr. Portnell secured the first prize, second Mr. A. L. Offer, third Mr. S. Pope. In the class for four plants Mr. S. Pope secured first, Mr. A. Offer second, and Mr. Portnell third prizes. With eight ornamental foliage plants Mr. Offer came to the front, Mr. Pope second. Mr. Offer was also awarded first for eight exotic Ferns, followed by Mons. L. Dupond. For the group of Ferns Mons. L. Dupond was easily first with a splendid group. The other prizewinners for plants being Messrs. Hickmott, Allan and Wilkins. Cut Roses were well shown. In the class for forty-eight, distinct, Mr. Brown, gardener to Mrs. Waterlow, Reigate, securing premier position with a grand stand, followed by Mr. B. R. Cant, Colchester, and Messrs. G. Bunyard & Co., Maidstone. Mr. Brown also secured the National Rose Society's medal for a beautiful bloom of *Innocente Pirola*. With twelve Teas or Noisettes Mr. B. R. Cant was first, Mr. J. Brown second, and Messrs. J. Cheal & Son third.

The strongest competition was in the fruit classes, sixty bunches of Grapes being staged. Mr. J. Osman, gardener to L. J. Baker, Esq., secured the first prize for black Grapes with splendid bunches of Black Hamburgh, Mr. Pope following with large bunches but badly finished; G. Clinging third with smaller but splendid finished bunches. In the class for white Mr. J. Friend, Godstone, was a good first with splendid bunches of Foster's Seedling. Mr. J. Moorhouse was second, and Mr. F. Morris third, other successful exhibitors in the fruit classes being Messrs. Hopgood, Fennell, Dunn, Searing, Allan, Hickmott, Careless, Harvey and Friend. Mr. F. Dunn secured the premier position for vegetables. Mr. G. Newman of Bromley took the lead with bouquets, buttonholes and sprays, Mr. G. Fennell for table decorations, closely followed by Mrs. Halton and Mr. W. Searing.

The tent devoted to cottagers was well filled with remarkably fine samples of vegetables and flowers. Space will not permit to mention the

local classes, which were well filled, and reflected great credit on the gardeners in the neighbourhood.

EALING HORTICULTURAL SOCIETY.

THE annual Exhibition of this Society took place on July 9th, but under conditions of the most depressing character. The operations of the Society are now confined to the parish of Ealing, and though this act of contracting the sphere of operations of the Society shut out several competitors, others competed for the first time, and so tents of similar size were needed to contain the exhibits.

Groups arranged for effect are always a great feature at Ealing, and the keen competition of previous years has operated to develop a high order of artistic grouping. The best of the large groups came Mr. T. A. Gledstanes, Gunnersbury Lane; Mr. Roberts, gardener to Mr. Harris, Castle Bar, second; and Mr. Vyner, gardener to R. Dawes, Esq., third. In Mr. Gledstanes' group were several fine Orchids, *Cattleya superba speciosa* being in fine form, and richly coloured. The best small group came from Mr. F. Gerlach, Hanger Vale House; Mr. Edwards, gardener to W. Owen, Esq., Castle Bar, being second.

Specimen plants were not up to their usual character. Mr. C. Long, gardener to Mr. E. P. Oakshott, had the best six plants in flower; Mr. F. Hicks being second. Mr. Long had some excellent Fuchsias, the best we have seen in Ealing for years, finely grown and bloom, Lye's Charming, a dark Fuchsia, being one of the very best exhibition and decorative varieties. Mr. F. Hicks and Mr. J. Harris also had some good Fuchsias. Begonias, large flowering and bedding Pelargoniums, specimen stove and greenhouse plants, and Gloxinias were all good features.

Foliage plants and Ferns were generally of good proportions and well grown. Among them were some very fine foliaged Begonias from Mr. Thomas Nye, Castle Bar. Mr. R. Dawes had the best six foliaged plants; Mr. T. Nye being second; while Mr. F. Hicks had the best four; Mr. E. Hyde having the second best. The best six Ferns came from Mr. J. Boosey; Mr. E. Tautz was second; Mr. J. Harris having the best four Ferns or Mosses. All the plants were clean and well grown, but they did not call for special remark.

Striking out the classes for Roses open to all comers certainly operated to curtail the exhibition of the Queen of Flowers. The leading class was for eighteen blooms, the four medals of the National Rose Society being offered as prizes. The gold medal was won by Mr. E. P. Oakshott, the silver-gilt by Mr. E. Hyde, the silver by Mr. E. Tautz, and the bronze by Mr. J. Moore. There were classes for eighteen Teas and Noisettes, and for twelve and six Roses, in which the local growers acquitted themselves in a commendable manner, but the rain has disfigured not a few of the blooms. The class for twelve bunches of stove and greenhouse cut flowers brought a fine lot from Mr. T. A. Gledstanes, which included the new Brazilian *Aristolochia elegans*, and a nice spray of *Bougainvillea speciosa*. Mr. Chadwick was second. Hardy herbaceous plants were shown in bunches of twelve and six, but they were small, and the subjects not so good as they might have been. Bedding Pelargoniums, Begonias, and Gloxinias, all nicely arranged in a cut state, were pleasing features, and some good Sweet Williams were shown.

Fruit is a declining feature at Ealing, in so far as Grapes, Peaches, and Nectarines are concerned. Mr. R. Dawes was first, and Mr. W. Owen was second with two bunches of black Grapes, both showing Black Hamburgh. Mr. F. Hicks had the best two bunches of white Grapes in Muscat of Alexandria; Mr. R. Dawes coming second with Foster's Seedling. Some fine Strawberries were shown. Peaches and Nectarines were confined to a very few dishes, but bush fruits were numerous and very fine.

Vegetables were numerous also, but we are bound to say the Ealing gardeners do not show these so fine as they might. Mr. Chadwick had the best six dishes, competing for the special prizes offered by Messrs. Sutton & Sons; Mr. E. P. Oakshott being second. Mr. W. Owen had the best three dishes of Potatoes; Mr. Chadwick was second. Vegetables shown by cottagers, and grown almost entirely in the Ealing Allotment Gardens, were numerous and very good. Several of the leading prizes were taken by one of the local police constables, Mr. Goldsworthy, an allotment holder, who also took the first prize for the best kept allotment garden.

Table decorations were as usual a good feature. Miss Lilian Hudson, Gunnersbury House, had the best three pieces; Mr. Chadwick was second. Mrs. Slade had the best, and Miss L. Record the second best single piece. Stands of Roses and also of wild flowers were also well shown; and buttonholes, bouquets, and sprays were all in good taste. We regret to have to add that the takings at the gates fell much short of the usual amount.

Non-competing exhibits were numerous and good. Messrs. Lee and Sons, C. Turner, J. Veitch & Sons, and Fromow & Sons were the principal exhibitors.

WATERFORD SUMMER SHOW.

In exhibits and relative merits of the same the present Summer Show held on the 11th inst. was superior in most respects to any of its predecessors. I am aware the exigency of your space will only permit a condensed report, and a glance through the several sections, which numbered seventy-nine, and were divided into eight classes, as follows:—Plants in pots, cut flowers, fruit, vegetables, cottage and window gardening, children's class, bouquets, dinner table decorations, and nurserymen's classes.

Conspicuous among the plants with ornamental foliage were large specimens of *Croton D'Israeli*, *Dracena Baptisti*, *Croton Weissmanni*, finely coloured *Caladium Williamsi*, &c., from Raymond De La Poer,

Esq., Kileronagh, near Waterford (Mr. Crawford, head gardener), who had first prize; while notable in the second prize collection of W. G. D. Goff, Esq., Glenville-in-the-Suburbs, were Pandanus Veitchi and Yucca aloifolia. The prizes for magnificent specimens of exotic Ferns went exactly in the same way. Captain De La Poer's Adiantum cuneatum was the largest and healthiest I ever noticed in any collection, public or private; A. gracillimum, A. farleyense, and the Golden Gymnogramma were scarcely inferior. Mr. Goff had nearly the same varieties, very neat and healthy, but smaller. C. E. Denny, Esq., May Park, had entries in most of the classes, and got first prizes for Zonals single and double, good varieties fairly grown, Tuberous Begonias, and for single and double Petunias among plants; also for trusses of Zonals. He was a strong exhibitor among vegetables, getting first for Custard Marrows and Cucumbers, second for Turnips, same for Carrots, Onions, and Cauliflowers. Mr. Goff, already mentioned, is a strong supporter of the show, and besides the prizes for ornamental plants and Ferns, carried away first prizes for splendid Gloxinias, double Tuberous Begonias, Cockscombs, and Coleus, very large, and with the colours rich and defined. He was again to the fore for cut blooms of double Begonias, Tomatoes (Carter's Perfection), and Snowball Cauliflower. Perhaps the next most successful exhibitor was N. A. Power, Esq., Bellevue House, who got second for Gloxinias and Roses, and first for a box of La France Roses, first for single Tuberous Begonias, second for Strawberries, and first for Cherries, first for Cos Lettuce, Vegetable (Cream) Marrow, and Carrots, and second for spring Onions and garden Potatoes. Mrs. Jacob, Rockfield, got second for native Ferns, Dahlias, and first for Pansies. Mrs. Malcomson (Mr. Noonan) Ballinahill, and Villa Marina, is evidently reserving for Dunmore East, but still won prizes for Zonals in pots and Ivy-leaves and Balsams, and again for Lettuce, Carrots, and Tomatoes. William King, Esq., Mount Pleasant, though not a large exhibitor, had first for Ivy-leaved Pelargoniums, second for Coleuses, and again for double Ivy-leaves. Other notable exhibitors were R. T. Carew, Esq., for Melons, Pelargoniums, Grapes, Currants, &c.; Mark De Landre, Esq., J. H. Strangman, Esq., John N. White, Esq., John H. Snow, Esq., T. W. Anderson, Esq., Gracedieu, Robert Dobbey, Esq., and notably the courteous Secretary, who scored in several sections. Challenge cups were offered by Messrs. Saunders, Friar's Walk Nurseries, Cork, for Tuberous Begonias and Roses. The last was not won, and John N. White, Esq., Rocklands, had the cup for Tuberous Begonias. Messrs. Carter's prize for the best basket of vegetables was won by C. E. Denny, Esq., and Messrs. Sutton's by W. G. D. Goff, Esq. The Judges were Messrs. Aberne, Lismore Castle Gardens, and your correspondent.—W. J. MURPHY.



HARDY FRUIT GARDEN.

APRICOTS.—Soaking rains have evidently done the old trees good, as most of them are swelling a fairly heavy crop of fruit, and are yet forming strong lateral growths. The latter ought not to be very severely shortened, the better plan being to leave the shoots about 4 inches long, completing the pruning next winter. The advice to lay in strong young shoots wherever there is room for them, and especially over the exposed old wood, cannot be too often given, as this will put new life into the trees, young branches also producing much the finest fruit. The fruit ought not to be much smothered by leaves and shoots, nor on the other hand unduly exposed, or otherwise it will ripen unequally, that side getting all the sunshine being ripe long before the shaded side. Lightly shaded fruits are also of a clearer yellow colour, and therefore of more value than those spotted or blotched. If glass copings are kept on the upper portion of the tree ought to be syringed frequently in order to keep down red spider, ceasing when the fruit is nearly ripe, and commencing afresh when it is cleared off.

PEACHES AND NECTARINES.—These are better set with fruit than was at one time thought possible, and they are at last growing healthily and strongly. Very heavy crops ought not to be left on the trees, or all the fruit will be small and most probably of poor flavour. Only sufficient young growths should be reserved to well furnish the trees with fruiting wood next season, these as much as possible being laid in from the base and points of the present fruiting branches. Surplus shoots ought not to be wholly removed, but where there are fruits at their base, should be shortened to the fourth leaf. At the same time remove any leaves that shade and prevent the colouring of the fruit, also shifting nails that are now or soon will be in contact with the fruit. Too often the latter are discovered when they cannot be removed without completing the disfigurement of the fruits they are partially embedded in.

PEARS.—Where early stopping with the finger and thumb and disbudding has not been resorted to, there are now numbers of strong shoots to deal with. These are in many cases sufficiently matured to prune, and their removal in some instances and shortening in others will be of benefit in various ways. Where they are very thick, or there are already good clusters of fruiting spurs formed, or in the course of formation, the greater portion of them may well be cut cleanly out, the rest,

as well as all those where the main branches are not well furnished with spurs, being cut back to a length of about 4 inches; final or hard pruning to be deferred to the winter. Lay in leading growths wherever there is room for them. At the present time they can be either straightened or given a curve, as may be desired, but later on they will become more set and difficult to deal with. Thinning out the fruits where thick ought to be delayed no longer. The larger the natural size of the fruits the thinner they should be left, and always bear in mind that fine fruits are more than double the value of inferior samples.

PLUMS.—In but few instances is there much need for thinning the fruits. One consequence of the lightness of crops is a superfluity of strong shoots. These if neglected will soon be blown about by strong winds, and they ought in any case to be freely thinned, those reserved to be shortened back to a length of about 4 inches. Aphids are still very bad on some of the trees least exposed to the heavy rains that have fallen, and these should be given a good washing as previously advised.

APPLES.—Only the miniature cordon and espalier trained trees need be pruned now. These may well be treated as advised in the case of Pears. The remarks upon thinning out the fruit of the latter also applies with equal force to Apples. Heavily cropped trees naturally cast off some fruits, but in many cases there are still far more on dwarf trees than ought to be left, and the sooner some of these are removed the better. This can best be done either with strong Grape scissors or a sharp knife in preference to the more risky method of pulling them off. Small fruits of the Codlin family may be used for pies.

YOUNG FRUIT TREES.—No superfluous shoots ought to be allowed to form on any kind of young fruit tree, and the leading branches should be laid in or duly staked before they get too stiff to manage properly. Winds also sometimes prove very injurious among young trees, and more especially to those newly grafted or budded. The branches from the latter are liable to twist out or off as the case may be, and ought therefore to be kept well supported by stakes. None of the side branches of any young trees should be stopped, but their over-luxuriance may be checked either by depressing them considerably, or else by the removal of some of their leaves. Strong fairly well matured leaders on espalier Pear trees may be cut back to a length of about 10 inches, and from these will spring several fresh shoots. Select three of the best placed of these, one for a leader and the other for side branches. In this manner two sets or tiers of branches are secured in one season.

BUDDING FRUIT TREES.—The present is a good time to bud Apricots and Cherries, Peaches, Nectarines, and Plums following. Apricots, Peaches, Nectarines, and Plums may be budded, either on trees of the same species with a view to quickly and simply improve their character, or else on the Plum stock. The Muscle Plum is the stock usually preferred, but there is no reason why other seedling Plums should not be tried. Any seedling Cherries are suitable for budding choicer sorts. This season the buds will run well, and they may be taken and inserted in the young wood of the stock in precisely the same way as Roses are budded on to the Briar. Buds may also be inserted into the young shoots on any part of fruiting trees under glass or in the open. They must, however, be taken from moderately strong shoots.

SMALL FRUITS.—Raspberries are growing very strongly, healthy plantations throwing up many more suckers than are required. These ought, therefore, to be freely thinned out at once. Autumn fruiterers that were duly cut down in the winter must also have their shoots freely thinned out, and this may lead to those reserved fruiting throughout their entire length. Red Currants, where very vigorous, should have their shoots thinned, and all side growth saved be shortened back considerably, in order to admit plenty of light and air to the fruit.

FRUIT FORCING.

FIGS.—*Early Forced Planted-out Trees.*—The first crop is gathered. More moisture is now desirable, therefore resume syringing the trees twice daily, and sprinkle the borders and other surfaces as advised before the fruits commenced ripening. Thin the fruits, if plentiful, freely, reserving those nearest the base of the shoots. Tie in the growths to the trellis as they advance, stopping or removing such as are not required, regulating those retained, so that they may receive the beneficial effects of light and air. Trees in borders of limited extent will require water freely and frequently, affording on every occasion some stimulating food as liquid manure from tanks duly diluted, or guano, 1 lb. to 20 gallons of water, is suitable. It contains a combination of elements, as also does liquid manure from stables, &c., and is safer than simple salts, as sulphate of ammonia, nitrate of potash, and nitrate of soda. They promote too much growth in Figs. Where crops are ripening maintain a free circulation of air, warm and rather dry, day and night. Avoid wetting the fruit, but an occasional damping in the house will benefit the foliage. Moderate moisture in the soil will meet all the requirements of ripening Figs, but it must not be overdone. Trees in pots required for early forcing must not be neglected in syringing occasionally, attending with regularity to the supply of liquid manure.

VINES.—*Early Forced.*—Red spider is mostly attendant on Vines, particularly when the Grapes are kept for any length of time upon the Vines after being ripe. Mixed assemblages of Vines for forcing are not good, but houses of such a size as will admit of a supply of Grapes for the establishment for a period of not more than six or eight weeks are most useful. This admits of the foliage being cleansed with the syringe

or engine, but a house having Frontignans, Sweetwater, and Hamburgh Grapes ripe in May, Muscat of Alexandria in June, and Alicante in July will, through keeping the atmosphere dry and warm in ripening the early varieties, cause red spider to increase upon the foliage of the Muscats, and the foliage of the early varieties cannot be cleansed, as syringing would cause the ripe Muscats to spot. This is a great evil in early forcing operations, and one the man is often more to blame for than the master through the in some respects laudable desire of having variety and gaining experience. Growing a motley assemblage of Vines in the manner indicated is most disastrous to present and future crops of Grapes. Where Grapes are required in April or early May to August, instead having the varieties to afford the supply in one house, we would divide it into two or three compartments, so that the respective varieties may have their proper treatment. In case of an attack of red spider no remedy is so safe as sponging the leaves with a weak solution of softsoap, 1 oz. to the gallon. It is tedious work, but taken in time is not so tedious as it at first thought appears. The pipes may be brushed over with sulphur brought to a thin cream with skim milk, heating them to 160°, but it is at best an uncertain remedy, not that it will not kill the existent insects, and repeated effect a cure, but it will spoil the tender skinned Frontignan and Muscat Grapes. Wherever sulphur is used on more than ordinarily heated surfaces it must be done with great care.

Muscats Ripening.—These require time and assistance from fire heat, so as to insure a night temperature of 70° to 75°, 85° to 90° by day, with abundance of air. They require a rather dry warm air, for under no other conditions will they attain to that golden hue characteristic of their unapproachable vinous rich flavour. Muscats also, of all Grapes, require plentiful supplies of water when swelling their fruit. They can hardly be overdone with water at the roots after the leaves are full sized until the Grapes are well advanced in ripening, the border having thorough drainage; therefore attend well to the watering of inside borders, and outside also in dry weather. Too much atmospheric moisture, however, is fatal to Muscats when ripening, causing them to be spotted; therefore seek by gentle warmth in the pipes and a little air constantly to prevent the deposition of moisture on the berries, surfacing the border inside, after a final watering, with a few inches thickness of dry material.

Shanking.—This occasions a serious deterioration of crop. Its chief cause is suspended root action at the critical period of the Grapes ripening. This may arise from a deficiency of ventilation in the early stages of growth, combined with too much moisture, inducing long-jointed growth and thin foliage, or it may be the roots are deep in an unfavourable rooting medium. To avoid shanking we must have properly prepared borders and well managed Vines, being careful to fully expose the foliage to light and air. For Vines prone to shanking avoid sudden fluctuations of temperature, particular attention being given to the ventilation, thereby securing a constant supply of nutriment, not only for the formation of starch, but that still further process of ripening, and by which it is converted into sugar. Regulate the young growths, adopting the extension rather than the restrictive system where there is room for it without crowding, keeping all gross laterals stopped so as to cause an equal flow of sap throughout the Vines, and this will do much to prevent shanking.

Young Vines.—Those of this year's planting should, provided the light is not too much obstructed, be allowed to grow unchecked, it being presumed that they will be cut back to the bottom of the trellis, or to three or four buds at the winter pruning. Any supernumeraries intended for next year's fruiting should be regularly stopped at a length of 7 to 8 feet, removing the laterals beyond a joint, which it is essential to keep to prevent the starting of the principal buds, preserving the old leaves, and as the wood will require thorough ripening a free circulation of air will be necessary, with fire heat if the weather be cold and wet. The border should be mulched and duly watered right up to the neck or collar, with a view to obtain and encourage the growth of adventitious roots, which are highly advantageous to a strong break the following season.

Vines in Pots.—Those intended for fruiting next season should by this time have completed their growth, especially those required for early forcing, which must have no more water than will prevent the foliage becoming limp, and they should be exposed to all the sun and light possible, so as to thoroughly ripen the wood and the buds. Keep the Vines free from insects, as it is very important that the leaves perform their functions. After the wood becomes brown and hard the Vines may be stood in front of a wall with a south aspect, securing the canes to the wall to prevent the foliage being damaged by wind.



APIARIAN NOTES.

THE WEATHER.

THE bees are attempting to fly, which we used to put down as a sign of improving weather, but we dare not predict now. The temperature keeps low. At midday on July 11th the thermometer was standing at 53° Fahr., and the mean temperature for

the past week has been 49½°, the readings being taken three times daily, the highest being 66° on the 9th, but this lasted for less than five minutes. Since June came in it has not been more than twenty hours at 65°. The rainfall has been excessive. On the 5th 1 inch of rain fell in eight hours, the wind being northerly; and again between Monday night and Tuesday morning the same quantity fell. Sunshine is greatly needed, and a few weeks or even days of it would change the dismal appearance.

HONEY PROSPECTS.

At present the prospect of a good yield of honey is not promising, but we have not lost faith yet. The movements of the bees, together with that of the barometer and thermometer, indicate finer weather, and it is a usual occurrence after a long time of wet for the thermometer to sink to 32° during the summer months immediately before a change. But so low has the temperature been during the past week that the bees have been chilled by thousands, the ground being strewn with dead bees.

PREPARATIONS FOR THE HEATHER.

Swarms will be of little use, and young fertile queens we used to depend upon for keeping up the strength of the hive are this year still barren. In an ordinary season they would have been by this time at the head of populous hives. The only thing we shall have to depend upon are our winter unswarmed stocks, and these, if we do take them to the moors, will be supplied with from 6 lbs. to 10 lbs. of sugar each hive, and not extra supered, as the cold weather is sure to make the Heather late. Should the weather improve for the next two weeks young queens may mate, and some stocks may swarm. Should both occur, the swarms will be placed into full sheeted frames and fed a little, a few nuclei will be raised from the old stocks that swarmed, and the remaining combs of brood will go to strengthen the hives of the first young queens, so that they may be able to gather a surplus of Heather honey. It is, however, prospective only, and is what we wish. At present feeding is our only hope to secure a supply of honey from the Heather, or failing that stocks for another year, for without feeding few stocks will survive many days.

DO BEES PAY?

I have frequently alluded to this question, and have shown that bees do pay. I will therefore supplement my article of last week, page 37, and show in what manner bees pay, and the expenses incurred in bee-keeping. Many who started bee-keeping with the view of making money or an easy living, induced by the glowing accounts of the profits derived from bees by interested persons, gave them up in disgust. Then others, who happened to start bee-keeping at times more favourable for bees, took immediately to giving instructions in bee-keeping, concerning which in reality they knew very little beyond having been fortunate in securing at the outset a large yield of honey. Every pound of surplus honey gathered by the cottagers' bees ought to be of the same value to him as a pound of butter, and well-managed hives may be depended upon to give on an average annually at least 20 lbs. of honey. Frequently we have had 200 lbs. from a hive in one season, and 100 lbs. is quite a common yield when the seasons are favourable. Seasons occur, however, when the flowers yield no honey, and the bees are kept alive by feeding, meaning a loss of from 5s. to 10s. for each hive, depending upon the price of the sugar and the strength of the hive. Bees are much more cheaply fed now with good sugar at 2d. per pound than when it was from 8d. to 1s. per pound. All that can be taken into consideration, and I will endeavour to show how misleading it is to say that bees will pay with honey selling at either 3d. or 6d. per pound; the reader will have no difficulty in seeing the absurdity of the statement that £7 of profit could be made annually from any hive.

We may safely set down that £1 outlay is necessary for each hive at the commencement. The appliances all being of a perishable nature require a certain amount of outlay annually for

repair. The two outlays combined will at a very low estimated rate of interest add a penny of loss on every pound of honey realised. An equal loss will result from bad seasons, which during the past fifty years has been more than a third, and might be safely set down as 2d. loss on every pound of honey realised. Where bees have to be moved about an actual outlay of from 2d. to 3d. per pound is incurred, and this does not include the time occupied, which it will be remembered some have said cottagers ought not to count. Bee-keepers are as much entitled to be paid fully for the time employed in looking after the bees as any artisan for work done by them, and that time will at the least amount to another penny. Packages for honey will cost another penny, and if the honey to be sold is to be sent by train or other conveyance it will take from 1d. to 3d. for each pound, depending upon the distance. The foregoing are outlays the bee-keeper cannot get rid of, and amount to more than what we have been told was sufficient to make bee-keeping a paying concern. There are other incidental expenses, including loss of stock from bad seasons or foul brood, which, if the truth was told, would amount to a sum not less than any one already mentioned. We consider it not only within our province but our duty to warn bee-keepers, as well as to instruct them how to make bees pay with the least amount of trouble and expense, and it is to be hoped the foregoing will assist and enable bee-keepers to turn everything to the best account in connection with the apiary, and to rely upon his own good sense more than the erroneous statements of others, whatever their object may be.

—A LANARKSHIRE BEE-KEEPER.

BEES AND FRUIT TREES.

CAN "A Lanarkshire Bee-keeper," or gardeners who keep bees, give their experience of their value in fruit gardens and orchards? I have heard of bees being placed in Peach houses when the trees are flowering. Is that of substantial value in causing the fruit to set? If it is they ought to be of service in fruit gardens. Is it so, or only fanciful?—AMATEUR.



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Carnation (J. B. H.).—The flowers sent indicate that the variety is a good one for borders and decorative purposes. The name Orange-man is appropriate.

Classification of Exhibitors (W. Ames).—The Secretary of the Society is the proper person to answer your second question. In respect to the first, a farm labourer is obviously not a professional gardener.

Figs for House (J. A.).—Omit Brunswick and select Brown Turkey, the best of all Figs. Negro Largo and Osborne's Prolific are good. Gingo de Mel and St. John's are excellent, good for growing under glass, forced or otherwise.

Figs not Swelling (Inquirer).—The variety may be in fault. We have two trees growing near each other, one of which casts all the fruit, the other ripening a good crop. More particulars respecting the soil and position of the tree are requisite for your case to be comprehended.

Increasing Primula obconica (W. T.).—It is best raised from seed, the plants growing more freely, and are more floriferous than those from division. The latter may be done now, keeping them in a cold frame, rather close, moist, and shaded until fresh growth takes place.

Machines for Cider Making (R. C. Lee, Kulu).—We have not seen any presses more suitable for making "cider on a small scale" than some that were exhibited at the Royal Agricultural Society's Show at Windsor by Messrs. Ch. Mayforth & Co., Frankfort, and illustrated in this Journal, the issue of August 29th last year. The London office of the firm is 16, Mincing Lane. The machines appeared to be strongly made and not liable to get out of order.

Making a Bed of Lily of the Valley (X. M.).—The best time is the autumn, as soon as the old growths have died down, or in November. They thrive in an open situation, an east or west border answering well. Their great bane is a hot and dry border, but the more light they have and better they are fed and watered during growth the finer crowns they will make, the soil being moderately firm so as to insure sturdy growth.

Bunching Flowers for Market (P. N., Derby).—In making up bunches of flowers for sale it is usual to have them of various sizes suited to requirement. These may vary from three to a dozen for Violets, just as taste prompts a large or a small buttonhole, but usually the bunches are made up in such size as can be held easily in one hand. This may in Violets mean fifty blooms, of Mignonette a dozen to fifty spikes, the same of Wallflowers, or more, and a dozen blooms of Carnations. These may be stated to be minimum numbers, one or two being given over in each bunch. The bunches bring prices according to their size, small bunches as a rule being of little use except to retailers.

Manure for Tomatoes (F. S.).—Muriate of potash and superphosphate would be best for Tomatoes. Sulphate of ammonia and nitrate of soda would encourage too much leaf-growth at the expense of the fruit. A good proportion would be two parts of superphosphate and one part muriate of potash. If you want growth, increase the superphosphate to three parts, and take one part each muriate of potash and sulphate of ammonia, which will give good results in growth without prejudicing the crops of fruit. Incorporate well together, taking the ingredients by weight.

Carnations and Picotees Eaten by Ants and Earwigs (X. M.).—The best mode of dealing with the ants is to find their nests and sprinkle those with carbolic acid diluted with twelve times the quantity of water, but it must be used where there is no vegetation; or dissolve a piece of camphor the size of a hazel nut in two quarts of boiling water, and when cool apply to the nests or places infested. It will kill the ants and not hurt the plants. For earwigs no trap is better than bean stalks cut into lengths of 6 to 9 inches, and placed about the infested plants. These will catch a great number, the traps being examined every morning, and the earwigs shaken out into a vessel containing boiling water.

Training Apple and Pear Trees (F. J. B.).—We do not know of any method of training which necessitates the "removal of all shoots in May except the terminal ones," unless it is taken to apply to the leading uprights in horizontal training, when of course two side shoots and another as leader are all that are required, the others being either rubbed off or pinched back to three or four leaves, so as to induce the formation of spurs. If the rubbing off were applied to all shoots except the terminal it would mean a tree for the most part devoid of spurs, and consequently useless. That is not the object of training, but the formation of parts fully exposed to light and air, so as to obtain fruit in profitable quantity of the highest quality. Palmette verrier training was never much practised in England, and its advantages over the horizontal are more fanciful than useful.

Diseased Tomatoes (H. R. and T. S. F.).—Judging from the diseased fruit sent, we should say your plants are affected by one of the forms of Cladosporium, which works sad havoc in very many instances for about three seasons, and then gradually becomes less troublesome. It is illustrated in our issue of February 13th of the present year. You must continue to maintain a dry atmosphere, giving fire heat whenever the weather is cold and dull. Painting the hot-water pipes with a mixture of sulphur and either milk or linseed oil, making them quite hot occasionally, has a decidedly deterrent effect upon diseases of a fungoid nature generally. Mr. Iggulden has great faith in Bentley's mildew specific, and you might give it a trial. Leaves much diseased ought to be early removed, but if old leaves are somewhat closely cleared off, a few young shoots should be permitted to grow, or otherwise there will be no foliage to maintain the plants in a fairly active state. This attack of disease will inevitably lighten the crops, but there is no reason why the plants should be wholly rooted out, especially seeing you will do no good, as far as the disease is concerned, by making a fresh start. These diseases are atmospherically spread, hence the difficulty in combating them.

Orange Seedling—Lapageria alba (W. T.).—Seedling Orange trees do not fruit under six or seven years with the most suitable treatment, and not so soon under the usual treatment, as the wood does not become sufficiently ripened to form bloom buds. If you were to give your plant more heat it would probably flower and fruit soon, but as there is no certainty of the variety it would be best grafted with an approved sort. Good turfy loam with a fourth of well rotted manure added and incorporated and a little charcoal and sand form a suitable

compost. They are best repotted in spring before they begin to grow. In order to fruit they require to be kept rather dry at the roots in winter, but it must not be such as to cause the leaves to flag, or they will fall. Excessive watering at all times must be carefully guarded against, but when growing they require copious supplies of water and liquid manure. The Lapageria for some unaccountable reason has become stationary. It may arise from improper treatment, probably unsuitable soil and insufficient supplies of water, or it may be kept too much exposed to light. It requires plenty of moisture, and light without direct sun.

Selection of Vines for Planting (J. A.).—For the very early house you name 1 Black Hamburgh, 2 Duke of Buccleuch, and 3 Mill Hill Hamburgh. To the first and last there is no objection, both being excellent for early forcing, but Duke of Buccleuch is liable to be spotted, and requires careful treatment. Foster's Seedling or Buckland Sweetwater are more reliable varieties. For the intermediate house you mention 1 Black Hamburgh, 2 Madresfield Court, 3 Muscat of Alexandria, and 4 Gros Colman. The latter we should omit, as it will not ripen until a month after the others, substituting Gros Maroc, and relegating Gros Colman to the late selection. Gros Maroc, though handsome, is a coarse Grape. For late you submit 1 Lady Downe's, 2 Gros Colman, 3 Gros Maroc, 4 Muscat of Alexandria or Canon Hall Muscat, and 5 Alicante. In this selection we object only to Gros Maroc, and should substitute Gros Colman for it, or Mrs. Pinee, but Gros Colman is the more satisfactory of the two where appearance and not quality is the consideration. Avoid Canon Hall. You place them in reverse order of their fitness for use. They should be 1 Alicante, 2 Muscat of Alexandria, 3 Gros Colman, 4, Lady Downe's. If you want a long keeping Grape you cannot have a better than Lady Downe's in place of Gros Maroc.

Peach Shoots Gummed (G. H.).—You ask, "What is the matter with the enclosed Peach leaves?" We have examined them carefully, and find nothing beyond a little scorching, which at first sight appears due to thin tissue having been acted powerfully upon by the sun. But in addition to the leaves you have very properly sent wood of the current growth. This enables us to tell you what is the matter with the trees. You say the leaves began at one end "falling off, and is rapidly going through the house." All leaves on wood similar to that before us will fall. It is badly gummed. In a length of 6 inches there is no less than fifteen brown patches, and the bark tissues destroyed down to the alburnum, which is also destroyed, therefore not permeable to fluids. In older wood the cells are choked with sedimentary matter and the supplies of sap cut off, so that the parts above the point of gumming die or are very much enfeebled. The cause is a fungus—*Coryneum Beijerinckii*—a highly contagious disease. The fungus, by its mycelium, develops a ferment, which penetrates the cells and converts their starch granules and other contents into gum. The fungus causes the exudation. This is not oxidised directly (as Liebig supposed) by the oxygen of the air, but through the intermediate agency of microbes, which multiply wherever they find an appropriate habitation. The fungus itself, according to Plowright, cannot penetrate the bark; there must be laceration or abrasion before the germ tubes can enter it. This, however, is readily effected by the punctures of insects, which—particularly ants—may be a direct means of contagion, as they are not infrequent visitors of the exudations. All the parts infested should be cut away and burned. They will perish or be very much injured, and always be uncertain, even if they survive. Therefore, remove them at once and to sound wood below the infection. Admit air freely, but maintain a good heat by day with a fair amount of ventilation, which will cause transpiration and the elaboration of the sap, hardening if not thickening the cell walls, and thus enabling the trees to better resist the fungus. Avoid a close vitiated atmosphere at any time, particularly at night. A little air constantly will secure a change of atmosphere. Cease syringing, except occasionally to cleanse the foliage. Afford no more water at the roots than is absolutely necessary to prevent the foliage flagging or becoming limp for any length of time. Avoid stimulants, particularly those that tend to exuberance of foliage, as potassie, sodie, and ammoniacal manures. What is wanted is phosphoric and sulphuric acids. Therefore use, if any, phosphatic manures, as superphosphate, *i.e.*, dissolved bones. Those measures will arrest the disease. As it is encouraged by too rich soil, and consequently over-luxuriant growth, lifting is a means of discouraging its attacks. Lift the trees in autumn, as soon as the leaves give indications of falling; and this, if done carefully, will not prejudice the next year's crop, but, on the contrary, will conduce to a good set and satisfactory stoning and finish of the fruit. If the soil is heavy and deficient in calcareous matter add a fourth to a sixth of old mortar rubbish, or a similar proportion of clay marl if the soil is light. Make the border firm, give a good watering, and mulch the surface with a little fresh short stable manure, which, through keeping the soil uniformly moist, will encourage roots to be made quickly; but avoid heavy mulching; an inch thickness is all that is required, and the lumpier it is the better.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures,

it being often difficult to separate them when the paper is damp. (J. C.).—A variety of *Cattleya Mendelli*. (A.).—The names are synonymous on the Campanula label; the others appear to be correct. (W. R.).—1, *Lilium Martagon*; 2, *L. Martagon album*.

COVENT GARDEN MARKET.—JULY 16TH.

HEAVY supplies now to hand, prices remaining unaltered with a fair business doing.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, $\frac{1}{2}$ sieve	2	0	to	6	0	Grapes, per lb.	1	3	to 3 0
„ Nova Scotia and ..						Lemons, case	10	0	15 0
„ Canada, per barrel	18	0	25	0		Melons, each	2	0	3 6
„ Tasmanian, p. case	15	0	0	0		Oranges, per 100 ..	4	0	9 0
Cherries, per $\frac{1}{2}$ sieve ..	3	6	10	0		Peaches, dozen	1	0	12 0
Currants, Black $\frac{1}{2}$ sieve	5	0	5	6		St. Michael Pines, each..	2	0	6 0
„ Red, $\frac{1}{2}$ sieve ..	3	6	5	0		Strawberries, per lb. ..	0	2	0 6

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.	
Artichokes, dozen	0	0	to	0	Mushrooms, punnet ..	1	6	to	2	0
Asparagus, bundle	0	0		0	Mustard & Cress, punnet	0	2		0	0
Beans, Kidney, per lb. ..	0	9		1	Onions, bushel. . . .	3	0		4	0
Beet, Red, dozen	1	0		0	Parsley, dozen bunches	2	0		3	0
Brussels Sprouts, $\frac{1}{2}$ sieve	0	0		0	Parsnips, dozen	1	0		0	0
Cabbage, dozen	1	6		0	Potatoes, per cwt. . . .	3	0		4	0
Carrots, bunch	0	4		0	" New, per lb. . .	0	2		0	0
Cauliflowers, dozen. . .	2	0		4	Rhubarb, bundle	0	2		0	0
Celery, bundle	1	0		1	Salsafy, bundle	1	0		1	6
Coleworts, doz. bunches	2	0		4	Scorzonera, bundle ..	1	6		0	0
Cucumbers, doz. . . .	2	0		3	Seakale, per bkt. . . .	0	0		0	0
Endive, dozen	1	0		0	Shallots, per lb. . . .	0	3		0	0
Herbs, bunch	0	2		0	Spinach, bushel	1	0		2	0
Leeks, bunch	0	2		0	Tomatoes, per lb. . . .	0	6		0	8
Lettuce, dozen	0	9		1	Turnips, bunch	0	4		0	0

CUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.		
Arum Lilies, 12 blooms ..	2	0	to	4	0	Mignonette, 12 bunches..	2	0	to	4	0
Asters, per bunch, French	1	6		2	0	" Fr., large bunch ..	0	0		0	0
Bouvardias, bunch ..	0	6		1	0	Narcissus, 12 bunches ..	0	0		0	0
Carnations, 12 bunches ..	4	0		6	0	Pæony, dozen bunches ..	0	0		0	0
" 12 blooms ..	1	0		2	0	Pansies, dozen bunches ..	1	0		2	0
Calceolaria, doz. bunches	4	0		6	0	Pelargoniums, 12 trusses	0	9		1	0
Cornflower, doz. bunches	1	6		3	0	" scarlet, 12 bunches	3	0		6	0
Eschscholtzia, 12 bunches	2	0		4	0	Pinks (various), doz. behs.	3	0		6	0
Eucharis, dozen	4	0		6	0	Primula (double) 12 sprays	0	6		1	0
Forget-me-not, doz. bunch.	1	6		4	0	Ranunculus, doz. bunches	0	0		0	0
Gardenias, 12 blooms ..	2	0		4	0	Roses (indoor), dozen ..	0	6		1	6
Iris, various, dozen bunchs.	6	0		18	0	" Moss (Eng.), 12 beh.	6	0		12	0
Lapageria, 12 blooms ..	2	0		4	0	" Red (Eng.), 12 beh.	2	0		6	0
Gladiolus, 12 bunches ..	4	0		9	0	" Red, 12 blooms ..	1	0		2	0
Gypsophila, per bunch, Fr.	1	6		2	0	" Tea, white, dozen ..	1	0		3	0
Lilium, various, 12 blms.	0	6		1	0	" Yellow	2	0		4	0
" longiflorum, 12 blms.	2	0		4	0	Spiræa, dozen bunches ..	6	0		9	0
Marguerites, 12 bunches	2	0		6	0	Tuberose, 12 blooms ..	0	6		1	0
Maidenhair Fern, dozen bunches	4	0		9	0	Wallflowers, doz.	0	0		0	0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.		
Aralia Sieboldi, dozen ..	6	0	to	12	0	Geraniums Scarlet, p. doz.	3	0	to	6	0
Arum Lilies, per dozen ..	8	0		12	0	Heliotrope, per doz. ..	5	0		8	0
Arbor Vitæ (golden) doz.	6	0		8	0	Hydrangea, doz. pots ..	9	0		18	0
Azalea, various, per dozen	0	0		0	0	Lily of the Valley, 12 pots	0	0		0	0
Calceolaria, per doz. ..	6	0		9	0	Lobelia, per doz.	3	0		4	0
Climbing Plants, various, dozen pots	4	0		9	0	Marguerite Daisy, dozen	6	0		12	0
Cyclamen, per dozen ..	0	0		0	0	Mignonette, per dozen ..	4	0		6	0
Deutzia, 12 pots	0	0		0	0	Musk, per dozen	2	0		4	0
Dracæna terminalis, doz.	24	0		42	0	Myrtles, dozen	6	0		12	0
" viridis, dozen ..	12	0		24	0	Nasturtiums, dozen pots	3	0		4	0
Epiphyllum, per dozen ..	0	0		0	0	Palms, in var., each .. .	2	6		21	0
Erica, Cavendishi, per pt.	0	0		9	0	Pelargoniums, per doz. ..	6	0		12	0
" various, dozen ..	12	0		13	0	Rhodanthe, per dozen ..	4	0		8	0
Euonymus, var., dozen ..	6	0		13	0	Roses (Fairy), per dozen	8	0		19	0
Evergreens, in var., dozen	6	0		24	0	" 12 pots	0	0		0	0
Ferns, in variety, dozen ..	4	0		18	0	Saxifraga pyramidalis, per dozen	18	0		24	0
Ficus elastica, each .. .	1	6		7	0	Spiræa, 12 pots	6	0		9	0
Foliage plants, var., each	2	0		19	0	Stocks, per doz.	4	0		6	0
Fuchsia, per doz.	4	0		9	0	Tropæolums, various, per dozen	3	0		6	0
Geraniums, Ivy, per doz.	3	0		6	0						

Bedding Plants in variety, in boxes and pots.



THE "ROYAL" MIDSUMMER JOURNAL.

SOUND, readable, and useful is the impression we received from a glance through the pages of the new part of the Journal of the Royal Agricultural Society, and though some of the papers

are somewhat heavy in style, better is it to err in that direction than to adopt the flippant frothy style of certain would-be popular writers of the present day. Mr. Daniel Pidgeon's paper on "The Development of Agricultural Machinery" has the place of honour, and well does he tell what good work has been done by the implement trials at the "Royal" Shows; how the Judges have made implement makers "sit up" in a way that was entirely new to them; how the prize engine, which in 1849 burned $11\frac{1}{2}$ lbs. of coal per horse power per hour, was so wonderfully improved in 1887 as to do the same amount of work with $1\frac{1}{2}$ lb. of coal per hour! how that which is true of steam engines is true of other implements, and how the trials have gradually become more and more thorough and exhaustive.

Professor Wrightson's "Agricultural Lessons of the Eighties" takes a hopeful view of the future of British agriculture. A brief sketch of the depression and its consequences tells how there never has been a period of greater activity of thought, of proposed alterations, of attention to agricultural matters. The decade has witnessed the stirring sight of landlords and tenants combining to grapple with difficulties caused by influences altogether outside their control. Well says the writer that "Disaster is to Englishmen the trumpet call to action," and when farmers were able to realise the gravity of their position they did not flinch from a struggle out of which they are now coming with the enlarged power which mental growth confers, and with greater ability to adopt the changes in farm management which have become inevitable. What those changes are the paper shows under separate headings, and though the learned Professor's conclusions as to the return of more favourable conditions of climate are hardly supported by the gloom and wet of the weather just now, his "lessons" cannot fail of being useful.

Admirably in keeping with the tone of Professor Wrightson's paper is that of Mr. Gilbert Murray on "Increasing the Home Production of Beef." The importance of self-supporting farms of home bred stock, of building up herds of milking cows, of pure well-selected sires, of a steady development of the stock-bearing capabilities of farms, and of thorough systematic action in every detail of farm practice is clearly set forth, and there is also a useful description of the cropping rotation followed upon a farm devoted to the production of milk and meat, with same account of the practice at Elvaston.

Dr. Fream has another paper on "The Herbage of Pastures," which, apart from any reference to the Rye Grass controversy, is really a valuable, interesting, and unique contribution to agricultural literature. Since 1888 the scope of his inquiry has widened, and it now embraces the whole of the British Isles. It proves beyond dispute that the per-centage of Rye Grass in pasture generally is high, and in some of the best pasture it is very high. The most remarkable example of this is from a field in the Vale of White Horse, near Wantage, in Berkshire, where the per-centage of *Lolium perenne* proved to be as high as 72. Mr. C. H. Eady, who manages the farm, says the area of the field is forty-six acres. Last year he says, "The last week in April I stocked it with forty-four Hereford steers and four Shire fillies. The Herefords were all fat and sold to a London dealer by the middle of July. I then drafted thirty-six other Herefords into it from inferior pasture. They were all fat, and gone by the end of August. I then stocked it with forty shorthorn heifers; twenty of these were sold fat at the end of October, the remaining twenty, being half fat, were put in the stalls about the first week in November. I then put in twenty-four Welsh runts (stores) to clear it up, and they have (February 14th), until quite recently, been doing well, when I moved them into straw yards. I have never known any artificial food of any sort given to beasts in this field." We have given Mr. Eady's statement in full as affording remarkable proof of the highly nutritious properties of Rye Grass, and this is all the more striking by the absence from this pasture of *Dactylis*, of the *Fescues*, and all the other "indispensable" permanent pasture Grasses with the exception of 2 per cent. of *Phleum pratense*.

Among other useful matter the tables of agricultural statistics are valuable for reference; and among the "notes" is one in favour of the cultivation of sugar Beet. The cultivation of Beet is simple enough, but its conversion into sugar, or rather the extraction of its saccharine matter for that purpose, in this country has hitherto proved a failure. East Anglian farmers have had a try at it, and the idle sugar factory at Lavenham in Suffolk affords tangible proof of the folly of embarking upon such an undertaking without first acquiring a practical knowledge of the process of making Beet sugar, and applying a severe test to the yield of saccharine from Beet grown under similar conditions to those which answer so well for Mangolds. Sugar Beet and Tobacco can both be grown here, but we can turn neither to profitable account, and the three notable failures in the Eighties are in making Beet sugar, Tobacco, and condensed milk by farmers.

WORK ON THE HOME FARM.

Another week of dripping weather renders us less hopeful of a bountiful harvest, for without fine weather now our reasonable expectations of a full corn crop can hardly be realised. We hear doleful accounts of Wheat in full bloom beaten down by wind and rain, which certainly means a light crop at best. The gales of the 4th and 5th inst. have done a serious amount of harm to corn, fruit, and hops in southern districts, the storm area which then came so slowly up the English Channel bringing torrents of rain and such terrific blasts of wind that even Potato haulm and field Beans were beaten down. Hay-making has been almost at a standstill, and it is only those who have been alert to seize every brief opportunity of a cessation of rain who have been able to open the haycocks and cart any hay to the ricks. We have so far only been caught once, and have continued to cart a lot of hay in fair condition, while storm clouds have been rolling up from the west, for this year it certainly appears to be a case of nothing venture nothing have.

Not a single stack of hay would we make in such unsettled weather were we in the position of a tenant farmer, with whom in such a season ensilage should have first place. We can conceive of the entire satisfaction—even in such a wet summer—of farmers whose cropping is intended for home consumption, who have a full head of live stock, and absolutely revel in their huge stacks of silage, the certainty of an abundant crop of roots, Cabbage, and Kale, and of a full bite on pastures late in the year. These are the men who continue prosperous, while others who stick to corn growing are on the verge of bankruptcy. Excellent silage presses can now be had for the price of a small rick cloth, so that there is really nothing to prevent every farmer from ensilage, unless it is ignorance, prejudice, or carelessness. Persistent haymakers are leaving much grass uncut till the weather clears, with the certainty of a serious loss of quality, all the earlier grasses having ripe seed, much of which has fallen.

This wet weather brings with it some risk of harm to lambs out on the soft growth of pastures, and they should be withdrawn as frequently as possible. A run for a couple of hours on pasture daily will do good rather than harm, but they will thrive best if folded on Tares and Oats forward in growth, and next on second crop Clover or Sainfoin. The ewes may be on pasture altogether, and with a full bite they will soon recover condition. All sheep must be examined narrowly for flies daily, and some Cuff's dressing applied at once when necessary.

METEOROLOGICAL OBSERVATIONS.

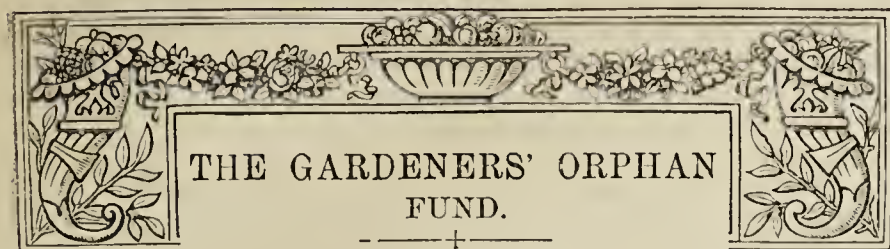
CAMDEN SQUARE, LONDON.

Lat. $51^{\circ} 32' 40''$ N.; Long. $0^{\circ} 8' 0''$ W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain
1890. July.		Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature.		
			Dry.	Wet.			Max.	Min.	In sun.	On grass	
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.	
Sunday	6	29.824	56.0	51.8	N.	56.0	60.3	47.9	103.6	47.0	
Monday	7	29.953	58.5	54.0	N.	55.6	65.7	47.4	110.0	44.6	
Tuesday	8	29.513	60.1	57.9	S.W.	56.2	72.0	51.8	119.3	51.8	
Wednesday ..	9	29.756	59.1	54.4	S.	57.4	63.0	54.4	82.0	52.5	
Thursday	10	29.961	60.3	53.4	N.	57.0	64.9	48.0	120.9	44.9	
Friday	11	29.898	55.3	51.4	N.W.	57.9	60.6	48.7	100.4	49.8	
Satnrday	12	29.975	56.4	51.3	S.	56.5	63.0	42.4	91.9	40.6	
		29.840	58.0	53.5		56.7	61.8	48.7	101.0	47.3	
										0.747	

REMARKS.

6th.—Generally overcast, but a little sun in the afternoon; spots of rain at 11 A.M.
 7th.—Generally cloudy, with frequent showers and drizzle in the morning and evening; rain at night.
 8th.—Wet early and drizzle till 11.30 A.M.; then fine and generally bright.
 9th.—Cloudy, with occasional spots of rain in the morning; wet afternoon; fair evening.
 10th.—Bright morning; frequently cloudy in afternoon; solar halo from 5 to 6 P.M.; heavy rain from 11.30 P.M. to 3 A.M. on 11th.
 11th.—Fine early; cloudy and frequently threatening in the morning; heavy rain from noon to 1 P.M. and at 4 P.M., then fine again.
 12th.—Cloudy and frequently threatening in morning; a little sunshine in the afternoon. Another cold and rainy week; mean temperature even lower than that of the preceding week, being 6° below the average.—G. J. SYMONS.



NOW that this admirable charity is fully and firmly established the time seems opportune for a recapitulation of the steps that were taken in its foundation, and for reporting the progress that has been made. The FUND was established on July 12th, 1887, and in the statement of accounts presented to the third annual meeting on July 18th, 1890, we find a record such as the most sanguine of its promoters could scarcely have anticipated when they were formulating a plan of action three years ago. These three years have been eventful in having shown in a remarkable manner how real is the sympathy of a large number of persons in the horticultural community with those who are struggling under adverse conditions for the maintenance of the fatherless children of gardeners, so many of whom, as experience has proved, were left helpless on the world. For aiding in the support of the practically destitute children of deceased gardeners, and rescuing them from pauperism, a sum exceeding £3000 has been raised for yielding revenue, while last year alone the payments to orphans amounted to nearly £250. Such a result, after meeting all the expenses of foundation and management, is most gratifying and encouraging. At the present time thirty children are provided for—twenty-five of these by election, four by munificent donations from the Duke of Bedford, Mr. Sherwood, and Mr. Veitch; and one by a sum raised as a fitting memorial of the late Mr. W. Wildsmith. As representing the first three years' work the above record, we think, is unparalleled in the history of charitable institutions in connection with gardening. The good that has been done and will be accomplished cannot be appreciated, but the greater this is the greater the reward to all who have shared in the endeavour to relieve human misery through the channels of this Fund.

Its present position has not been attained without effort, anxiety, and grievous associations. During the short period of its existence the charity has been deprived by death of the valuable services of four of its officials—Messrs. J. Woodbridge and C. Howe, members of the Committee; Mr. W. Wildsmith, local Secretary; and Mr. G. Deal, the first Chairman of the Committee. Mr. Deal, clear headed and good hearted, was the man for the moment, and it was largely through his instrumentality that the Fund was placed on such a sound basis in such a comparatively short time. That his name and services will be forgotten there is no cause for anxiety, and it is not unlikely that under the stimulus of those true friends of the charity, Messrs. Sherwood and Veitch, that the whole of the seven unsuccessful candidates at the recent election will become beneficiaries as Memorial children of the late Chairman. As a tribute to his worth none other could be so appropriate. If anything could lessen the grief occasioned by his death of those who were near and dear to him it is providing the means of life to seven gardeners' orphans, and if the Fund has done nothing more than that its existence would have been justified; but instead of seven it will shortly afford support to thirty-seven, whereat all in sympathy with the object must rejoice.

While it is true that "great results from little causes spring" the cause of the origin of the Gardeners' Orphan Fund was a great one—a great historical event, the fiftieth year of the reign of our Sovereign—but the first step taken that led to such an important

position as the charity now occupies was a small one—a short letter written to the gardening papers by Mr. C. Penny of Sandringham. This letter appeared in the *Journal of Horticulture* on February 10th, 1887. Various propositions had been made for commemorating the above event, but Mr. Penny proposed the establishment of an orphanage with land attached as a home and school for the orphans of gardeners. He said, "When one sees earnest hard-working gardeners struck down in the very heyday of life, leaving the children totally unprovided for, it seems time that some such scheme should be set on foot." Propositions of a similar nature were made almost simultaneously by Messrs. H. J. Clayton and J. Udale. Sympathy with the object was apparent, though there was considerable divergence of opinion on the question of procedure, and a large correspondence ensued. Observing that the main object was being obscured by a number of side issues, we gave prominence to the chief "Jubilee propositions" in a leading article on March 3rd of the same year, and in reference to a large sum of money being collected for an orphanage remarked:—

"In all probability much more good could be done with the money without a necessarily costly 'home' or building than with one;" and went on to say: "In an undertaking of the kind suggested, a question for the consideration of the projector and his supporters is the desirability of forming a central committee for deciding on a form of appeal, and drafting propositions to be submitted to gardeners and others in sympathy with the object in various parts of the country. With a complete organisation and wide concerted action there is not a doubt that a very large sum of money may be collected with the object of assisting the widows of gardeners in bringing up their children, and affording orphans a means of support and education, fitting them for their duties in life. The precise form in which this could be best done is a question that must be governed by the circumstances of the case. The object itself is so good that it would command support if placed before the public in a manner that could be devised by a committee of business men, for no individual, however able and earnest, ought to be expected to carry out a work of the magnitude suggested even with the aid, generous though it may be, of casual helpers, and it appears to us that an administrative body is necessary for carrying out, in the best manner of which it is capable, the project of which the Prince of Wales' gardener has had the honour to originate. If Mr. Penny should be fortunate in securing the patronage of his august master, the 'Popular Prince,' to this good object, its success will be assured."

That was what appeared in this Journal on the date mentioned, and though it could not be expected to secure the patronage of the Prince of Wales at the outset, which, for obvious reasons, cannot be given to new movements of a speculative character, it arrested the attention and secured the services of Mr. George Deal. He at once took a lead in the movement, and in consultation with friends the idea of a building was abandoned, an appeal made for support, and eventually a meeting was held on March 22nd in the conservatory at South Kensington to decide on future action. About thirty representative horticulturists were present, and Mr. Deal occupied the chair. The sense of the meeting was strongly against a building, and it was determined to raise a fund to be applied as subsequent meetings might direct for the assistance of gardeners' orphans. After some consultation it was decided on the proposition of Mr. J. Wright that the scheme should be entitled the GARDENERS' ORPHAN FUND. A provisional Committee was then appointed to consider the whole question, prepare rules, and report to a future meeting. The President of the Royal Horticultural Society subsequently granted the use of the Council room at Chiswick, and thus Chiswick became the headquarters of the Committee—a great advantage, with its Superintendent as Secretary. On July 12th a general meeting was held at South Kensington for receiving the report of the provisional Committee, and considering the rules at the same time presented.

This was a large and enthusiastic meeting, presided over by Sir

Julian Goldsmid, Bart., M.P., supported by Dr. Hogg (representing the Council of the Royal Horticultural Society), Dr. Masters, Messrs. Deal, Hibberd, Veitch, and others, and the Gardeners' Orphan Fund was formally established. Sir Julian Goldsmid was elected President, Mr. T. B. Haywood Treasurer, Mr. A. F. Barron Secretary, and an Executive Committee, comprising Messrs. G. Deal, P. Barr, W. Bates, H. Cannell, R. Dean, J. Douglas, W. Goldring, W. G. Head, H. Herbst, W. Holmes, W. Ingram, J. Laing, G. Nicholson, C. Penny, W. Richards, J. Roberts, W. Roupell, C. H. Sharman, J. Smith, H. Turner, H. Williams, J. Woodbridge, J. Wright, and B. Wynne.

Such is a brief outline history of the origin and establishment of the Fund that is now doing so much good. In these days of quick movement and short memories it seems desirable to collect from scattered reports and compress the salient facts on the occasion of the third and most successful anniversary, which is reported on another page. From the first the proposition met with general sympathy. A few persons hesitated to join heartily in the movement from excellent motives—the chief being a fear of weakening the Gardeners' Royal Benevolent Institution, but the Secretary of that admirable charity was not one of them, and became a supporter of the Orphan Fund in its early days. Since endeavour was made to provide for the children of adversity the institution for aged gardeners and their widows has made greater progress than ever, as also has the United Horticultural Benefit Society, which affords relief to its members during illness. We wish to see all these Societies prosper, and have, on suitable occasions, appealed strongly for the two older; at the present moment the younger is under particular consideration, and we bespeak for it the greatest possible support of the greatest possible number of gardeners and lovers of gardens. The demands of the future will be great, and while we believe there will always be affluent and generous helpers, it is most desirable that the actual workers in gardening should assist according to their means. The mites of the many not only become substantial in the aggregate, but act as direct incentives to extraneous aid. There is no truer maxim than this, "Heaven helps those who help themselves," and if every gardener in the land would do ever so little for the needy "little ones" in the gardening ranks, the more readily would the wealthy join in the noble endeavour. While it is evident the Committee of the Gardeners' Orphan Fund are anxious to give immediate relief to the fullest possible extent, they are conscious, as we are, of the extreme desirability of providing a substantial permanent fund to give stability to this much needed, excellent, and, we believe, well managed Institution.

ANNUAL MEETING.

THE annual meeting of subscribers to this Fund was held in the Cannon Street Hotel at 3 P.M. on Friday last, July 18th, N. N. Sherwood, Esq., one of the Vice-Presidents, in the chair. The Secretary, Mr. A. F. Barron, read the notice calling the meeting and the minutes of the last general meeting. The Committee's report, which had been printed and placed on the table, was then taken as read, and Mr. Sherwood reviewed the principal items in the cash statement, comparing them with last year's statement.

The CHAIRMAN then referred to the great loss the Fund had sustained by the death of their Chairman, Mr. George Deal, and moved a resolution to the effect that the meeting pass a vote of condolence with Mrs. Deal, which was carried unanimously. He then observed that a memorial had been proposed, and they could not think of a better mode of commemorating Mr. Deal's good work than by placing as many orphans on the Fund as possible. Some conversation had taken place between himself and Mr. H. J. Veitch, with the result that they proposed if £250 as a minimum could be raised they would place the seven unelected children on the Fund, a proposal that was received with loud cheers. After suggesting that it would be preferable if the financial year commenced in January instead of in July as at present, and that the annual dinner might also be held earlier in the

season, he concluded by moving the adoption of the report and cash statement.

Mr. H. J. VEITCH seconded the proposition, and congratulated the Committee on the favourable results of their work. It was wonderful that so much could have been effected in so short a time. He was quite willing to contribute his share to the Deal Memorial Fund as proposed by the Chairman, and he also agreed with him that it would be desirable that their year should commence in January.

The other business comprised the election of Mr. T. B. Haywood as Treasurer, Mr. J. Fraser as Auditor, Messrs. Bates, Dean, Herbst, Richards, and Wright were re-elected members of the Committee, with the addition of Messrs. G. Bunyard, J. Wills, and W. Marshall. Mr. A. F. Barron was unanimously re-elected Secretary, and Messrs. R. Dean and Ward were then appointed scrutineers of the ballot, an adjournment taking place until 4 P.M., when the following results of the election were announced and votes of thanks proposed to the various officials:—Robert James Phillips, 582; Thomas Henderson, 241; George Philip Shrubbs, 148; Henry Edmund Skeiton, 131; George Beveridge, 100; Bessie Stronach Deedman, 95; Frank Butcher, 87; Susan Elizabeth Baker, 86; Henry William Milne, 79; Arthur Lacey, 78; Alfred Henry Budd, 67; Mary Grieve, 72; Winifred Jones, 61; Evan Evans Kinch, 26; Sidney Alfred Offer, 72; Francis Thomas Pragnall, 68; and Arthur Henry Rowland, 20. The first ten having secured the highest number of votes were accordingly declared to be duly elected.

REPORT OF THE EXECUTIVE COMMITTEE.

The first words of the Executive Committee in presenting their third annual report to the supporters of the Gardeners' Orphan Fund must needs be an expression of profound sorrow at the loss which the Fund has sustained by the death of Mr. George Deal. Only those who have worked with him in the interests of the Charity can adequately appreciate his zeal on its behalf. His devotion to his duties as Chairman of the Committee was only equalled by his business capacity, and his genial presence will linger in the memory of all who were associated with him in striving to assist the orphans of gardeners in their heritage of adversity. He will long be remembered as a true friend and kind-hearted man; and the Committee desire to record their deep sympathy with Mrs. Deal in her great bereavement. They hope also, in due time, to be able to perpetuate his memory in a manner that in life would have secured his hearty approval.

The necessity for the institution, and its maintenance, is more fully proved by each year's experience. The first year eleven were placed on the Fund, ten by election and one in consequence of the handsome donation by Mr. Sherwood. The second year eight others were added, five by election, one by reason of a noble gift from the Duke of Bedford, and two as the result of a generous proposition made by Mr. H. J. Veitch, that he would give £100 conditionally on an equal sum being raised by other contributions, which were happily forthcoming.

On the present occasion the Committee, encouraged by the growing interest in the Fund, feel justified in recommending that ten candidates be elected, and one will be added by the Wildsmith Memorial Trustees, making a total of thirty children, who will be supported at a cost of £390 a year.

By the lamented death of Mr. W. Wildsmith of Heckfield the Charity lost one of its most active workers, and in no way could his memory be more appropriately cherished than in the manner previously indicated. His loss is mourned as a genuine gardener and a good man.

The Committee desire to record, gratefully, their thanks to His Grace the Duke of Bedford for the use—the third time—of the Flower Market in Covent Garden, also to the Lady Mayoress and Lord Mayor of London for opening the Evening Fête, by which means over £173 was added to the Fund. The services of all who contributed to its success are warmly appreciated. By the alteration of Rule XII., designed to recognise special endeavours on behalf of the Fund, thirty-four life-voters have been added, to forty of the preceding year, of the Covent Garden standholders for their valued co-operation.

For the help rendered by various friends in various ways, such as by collecting cards, money boxes, concerts, gardeners' improvement societies, flower shows, &c., earnest thanks are cordially tendered, and Mr. A. Henderson, Thoresby; Mr. J. Brown, Reigate; Mr. J. Hughes, Birmingham; Mr. D. T. Fish, Hardwicke; Mr. W. Roupell, Streatham; Mr. Cummins, Hackbridge; Mr. M. Todd, Edinburgh; and Mr. T. Turton, Maiden Erleigh, Reading, are mentioned as examples of active members who have worked effectively in aid of the Fund.

While gratified with the results achieved, and thankful that, by community of effort, thirty necessitous children have been provided for in three years, the Committee have to deplore the fact that the needs of many applicants cannot be met; a strong appeal is therefore made to all who are engaged in, or derive pleasure from horticultural pursuits, to consider the best methods by which they can support the Gardeners' Orphan Fund during the ensuing year.

The members of the Committee who retire by rotation are Messrs. W. Bates, R. Dean, H. Herbst, W. Richards, J. Wright, W. Goldring, C. Penny, and J. Roberts, and the first five being eligible are recommended for re-election. Messrs. William Marshall, Bexley; George Bunyard, Maidstone; and John Wils, South Kensington, are recommended for election, in the place of Messrs. Goldring, Penny, and Roberts, who retire.

CASH STATEMENT FOR THE YEAR ENDING JUNE 30TH, 1890.

RECEIPTS.													
								£	s.	d.	£	s.	d.
To Balance from last Account	..	..	..	..	..	..	..	..	..	..	605	13	9
" Subscriptions, General	..	..	..	..	..	..	..	342	10	0			
" Ditto through Local Secretaries	..	..	..	..	..	..	..	121	6	0			
								<hr/>			433	16	0
" Donations, General	..	..	..	..	..	..	..	379	7	8			
" Ditto through Local Secretaries	..	..	..	..	..	..	..	103	18	11			
								<hr/>			463	6	7
" Subscriptions given by and in reponse to appeal by Mr. Harry J. Veitch	..	..	..	..	..	..	..	..	..	..	200	13	0
" Wildsmith Memorial	..	..	..	..	..	..	..	..	..	..	188	14	9
" Covent Garden Fête	..	..	..	..	..	..	..	..	..	..	262	8	0
" Annual Dinner	..	..	..	..	..	..	..	..	..	..	88	8	9
" Sundry Entertainments	..	..	..	..	..	..	..	..	..	..	10	19	6
" Advertisements in List of Subscribers	..	..	..	..	..	..	..	..	..	..	31	0	0
" Interest and Dividends on Stock	..	..	..	..	..	..	..	..	..	..	53	16	10
											£2338	17	2

Note:—Investments.

2½ per cent. Consols	..	..	..	..	..	3078	15	10
3 per cent Canadian Stock	..	..	..	..	..	500	0	0
						£3578	15	10

EXPENDITURE.													
								£	s.	d.	£	s.	d.
By Allowances to Orphans	..	..	..	..	..	..	..				247	0	0
" Printing and Stationery	..	..	..	..	..	..	..	41	14	0			
" Annual Meeting	..	..	..	..	..	..	..	9	4	0			
" Hire of Rooms for Meetings	..	..	..	..	..	..	..	10	10	0			
" Postages	..	..	..	..	..	..	..	19	17	0			
" Secretary's Clerk	..	..	..	..	..	..	..	40	0	0			
" Bank Charges	..	..	..	..	..	..	..	0	9	5			
" Sundry Expenses (Petty Cash)	..	..	..	..	..	..	..	19	11	0			
" Covent Garden Fête	..	..	..	..	..	..	..	..	..	..	141	5	5
" Annual Dinner	..	..	..	..	..	..	..	..	..	..	84	19	5
" Purchase of £500 2½ per cent. Stock	..	..	..	..	..	..	..	491	18	0	54	10	8
" Ditto £512 15s. 2½ per cent. Stock	..	..	..	..	..	..	..	590	0	0			
" Balance at Bank	..	..	..	..	..	..	..	897	8	11	991	18	0
" Ditto in Hand	..	..	..	..	..	..	..	7	14	9			
											815	3	8
											£2338	17	2

Having inspected the Securities, and examined the Books and Vouchers supplied to us, we certify the above account to be correct.

(Signed) JOHN FRASER, Lea Bridge.. } Auditors.
WM. SHARP, Chartered Accountant, 60, Gresham St., E.C.

Dated July 11th, 1890.

THE DINNER.

The third anniversary dinner of the Gardeners' Orphan Fund was held on Friday last at Cannon Street Hotel, Mr. Shirley Hibberd presiding. The company was a large one, including about 160 horticulturists and friends. After dinner

The CHAIRMAN proposed the usual loyal toasts, reminding the company that the Fund was established to commemorate the Queen's Jubilee; whilst one of its founders was Mr. Penny, the gardener to the Prince of Wales.

The CHAIRMAN, before proposing the toast of the evening, "The Gardeners' Orphan Fund," said he must ask the company's consideration for a very serious matter. Since they last met death had been busy thinning the ranks. He would not attempt to mention all who had passed away from a sphere of usefulness within the last year, but two names he must bring before them. He should be wanting in his duty and he should be wanting in respect if he did not do so. They had lost their dear old friend Mr. Benjamin Williams of Holloway—a grand old gardener. They had lost another dear friend, whose presence was wanted now—Mr. George Deal, the first Chairman of the Committee of the Fund. Death was no respecter of persons, of race, or condition. When men went in the fulness of years, and they could believe that their labours were accomplished, there was no reason why they should not feel satisfaction that the Lord had been pleased to call them to His rest. But it did trouble them; it filled them with strange thoughts when men were taken in the prime of life, in the midst of their labours, when they were stricken down at a blow. It was not for them at that moment to philosophise upon those things, but to recognise the fact that they had lost two friends and deplore their loss, remembering how good an example those friends had left for others to follow. He asked them to drink upstanding and in solemn silence to the pious memory of Mr. Benjamin Williams and Mr. George Deal.

The toast was then drunk in silence.

The CHAIRMAN then asked the company to honour the toast of the evening. He said he wished to propose to them "Success to the Gardeners' Orphan Fund." (Cheers). It was a young institution, but it was becoming established, and it had been truly successful from the first. It was not always that a thing began and went on so well. There seemed, however, to be a reasonable promise of the continuation of the present prosperity, and of its increase as time went on. He hoped to be able to prove to them before he sat down that the Institution had some reasonable prospect of becoming increasingly useful. The primary idea was to provide something for the assistance of orphans of gardeners that were unprovided for. They knew all that. It was an intimation to them that all gardeners did not make provision for those they left behind them. It was one of the blessings of this life that we never knew how long it might last, for if they did life would be intolerable. He imagined many men neglected to make provision for the future because they had not the courage to face the fact that life was uncertain, that death might come upon them at any time. They had but to make observation, or to read the papers. They saw that youth and strength gave no guarantee of length of days, and they saw that weakness and infirmity, disease, want, and misery gave no sure promise of the coming of death. There were those who

lingered out their days, appearing to die every morning, and yet living. He believed many men neglected to make provision when they might do so, not from wrecklessness or selfishness, but because they would not see clearly that because of the uncertainty of life there should be a certainty of provision for death. We all loved life too much, that was why we drank and smoked. Every man wanted thirteen pence to the shilling—(laughter)—and endeavoured to live forty-eight hours in twelve. It was the case all through, and had been from the beginning of the world. It caused the use of narcotics and all the many dodges we resorted to to dodge death. Some of them were perhaps in some degree successful. Science helped us; in fact if science did not help us we should not live as long as we do. The best story that ever was told they would find in Aesop's Fables. It was the story of the old man and Death. The old man crept along in pain and misery bearing his burden. He was weary and sick of life, and he threw down his burden and said, "Oh that Death would come!" And out of the hill close by Death popped up his head and said, "Do you want me?" And the old man said, "Sir, would you be kind enough to help me take up my burden?" (Laughter.) The old man was ready to go on plodding again. The poet Young had said, "All men think all men mortal but themselves." (Hear, hear.) It was quite certain that men in all professions and occupations made enough for themselves and their families and vanished from the scene and left the whole of their affairs in confusion. They were not supposing he was making an accusation against gardeners. He could make none. From what he knew of gardeners he was prepared to say in the face of the world, that they were a provident, thoughtful class of men—(hear, hear)—that they acted in their whole life in accordance with the teaching of their business, for the teaching of their business was always to be looking into the future. He knew of no occupation which so encouraged a man to speculate as to what the future would bring forth. He (the gardener) put seed into the ground and watched the barometer that he might be guided in his work. Every part of his work was trusting to the elements, and was in the largest sense of the world trusting to Providence. Gardeners were a provident body, and they would scarcely meet a gardener who was not a member of some club or some society or fund that had for its object provision for the future, and they would remember that gardeners had a fund of their own now formed into the United Horticultural Benefit Society, which might have been a bigger thing than it is except for some strange accident in the early days of its career, but which was now perfectly sound and prosperous, and had before it, he believed, a very good future. Now, it was worthy of notice—none knew it so well as many who were present—that the demands upon gardeners in their daily life were very many and heavy. Gardeners were brought constantly under the action of what were called the laws of hospitality. In places that were frequented by visitors gardeners were put to considerable expense, about which they said nothing. He saw much of it, so did they; but they put the best face upon things. Many costs they would incur in the daily pursuit of their duties which did not come into the daily round of their business. Consequently there were many and heavy demands upon the gardener's purse, and his love of his business led him to many expenses. They would take a man engaged in building; he went plodding on making money. A gardener went about to see exhibitions, to look at gardens, as his business was one of observation. He must be always observing, always learning, and taking the measure of the world he was in. Consequently there was much to be said in mitigation of the general charge of want of provision for the future. But where would they find amongst a body of men earning their living by labour and skill, not a few who were cast down by calamities of various kinds, and who had had no opportunity to make provisions for their children. There must be a certain number of orphans, and therefore there was no exceptional case there, and they should deal with it as liberally as they could, having liberal sympathy with the children. Here was a curious case. They had, say, a list of seventeen candidates, and suppose they elected them, would they put an end to the trouble in those seventeen families? No. In every case except three in the list of seventeen there were other children unprovided for. One child was selected to put before the subscribers, but there remained others in the same family for whom, of course, provision was equally needed. The list of seventeen was in reality a list of fifty-two children in want. When he said fifty-two children in want, there might be some half dozen of them just beginning to earn a living, so that it would be seen that there was a large case to be dealt with, and not easily disposed of with a few guineas. If they took notice of one child in a family, what had they to say about the rest? Well he hoped the time would come when they would be able to say something about the rest. It had been said most properly that Mr. George Deal should be kept in remembrance in connection with the Fund by an act of special generosity on their part assembled to-night. Let them understand how the case stood. There were at the meeting to-day seventeen candidates; ten had been elected, and seven remain not elected. Mr. Sherwood spoke of giving £50, and Mr. Veitch spoke of giving £50, but the proposal had taken a better shape. It was so gratifying that he knew not in what terms to put it. Mr. Sherwood and Mr. Veitch proposed to provide for five orphans out of the seven on condition that those assembled that night provided for the other two. (Loud cheers). That was the case he had to put before them, and if they subscribed £250 as a minimum they would be enabled to place seven orphans on the fund to commemorate the services of Mr. George Deal. The Chairman then invited subscriptions towards this fund, and in the course of a few minutes announced that Messrs. Weeks of Fulham had subscribed £50, Sir Julian Goldsmid

£10 10s., Baron Schröder £10 10s., Mr. J. Wills £10 10s., Mr. Pearson £5 5s., Mr. Mitchell £5 5s., and himself £5 5s., a contribution which he subsequently doubled. He then proceeded to call attention to the balance sheet. The subscriptions for the year had amounted to £463 16s., and in addition the donations had been about the same amount. The money invested in securities was £3538, and the balance at the bank was £307. That was after having provided for all incidental expenses, and making provision for the orphans on the fund. He had always thought that a substantial reserve fund must be of considerable importance to an affair of that kind. (Hear). It gave stability in reality, and it also gave the appearance of stability to the public at large. If they had not a good reserve fund they were liable to disaster in the event of the loss of friends who had been largely supporting the institution. They were liable to disaster in the event of depression in trade or other circumstances which told upon charities, and it should be remembered that a reserve fund placed at interest produced an income for the enlargement of the Society's usefulness. The reserve fund of course should never be built up beyond reasonable proportions, which could only be judged by circumstances, but it should be the largest sum possible for a certain number of years, until the persons connected with the institution's management had felt their way. Strange things happened. They saw charities rise and fall—though, thank God, very few of them failed, they mostly prospered in this country—(hear). The Committee had always been of a careful calculating frame of mind, and had lost no opportunity of obtaining help from various quarters; and he must return thanks to the many persons who had assisted that fund by flower shows, concerts, and other entertainments. He must also return thanks to those who had taken charge of collecting boxes, and he hoped that all these various aids would be continued, for he was quite sure the money they brought in would be not a little. He hoped, before they separated, they would have seen their way to provide for seven orphans. Of the sum required only about £60 or £70 seemed wanting, and that was not a large sum for a gathering of some 150 persons to make up. In conclusion, he asked them to drink in bumpers "Success to the Gardeners' Orphan Fund."

The toast was honoured with enthusiasm, and

Mr. JOHN LAING replied in a few well chosen words, expressing the hope that the fund might go on and prosper in its object of helping the orphan.

Mr. H. J. VEITCH then proposed "Gardeners and Gardening." He said that he claimed for the Orphan Fund what Mr. Shirley Hibberd had said, that it had been a very great success from the first, and that the success was due to the gardeners of this country. If they analysed the list of donors and subscribers they would find that it was the practical gardener—in which term he included the nursery and seed trade—who had supported that excellent institution. (Hear, hear.) Therefore he thought they had every right to drink to "Gardeners and Gardening." He should like to say a word or two about what had been said with regard to Mr. Sherwood and himself. They were most anxious that something worthy of the late Mr. Deal should be done, and he was quite willing to admit that if they succeeded in putting the orphans on the fund they had succeeded in doing something. But there was also another reason, as it might enable them to make a slight alteration as regarded the date at which the annual subscriptions would be due. In consequence of the subscriptions being due at July some little confusion was caused, and if they were payable on the 1st of January he thought the money would come in a great deal better. If they could therefore assist in clearing the board of candidates for election, it would make it easier for the Committee to deal with the date at which subscriptions would be due, because there would be no election pending. That was a matter which weighed with them, though in a secondary degree. With the toast he desired to couple the name of Mr. John Wills, an honour to the gardeners of this country; a man proud to call himself a working gardener, who had worked his way up from a practical gardener to be one of the foremost decorators of his age. (Cheers.)

Mr. JOHN WILLS, in reply, said that as an old gardener nothing was more conducive to his happiness than to meet his fellow gardeners on every and any occasion. It had been a great source of pleasure to meet those who loved flowers, and he was sure the present meeting could not be more happy than it was when they came there to assist those little children who wanted support. As long as he lived it would be a source of pleasure to him to help in every way he could to support those who could not support themselves. He hoped they would see that Society increase to such an extent that they would be not only in a position to elect seven, but seventy-seven children to the benefits of the institution. (Cheers.)

Mr. ALEXANDER DEAN proposed the next toast, that of "The President, Sir Julian Goldsmid, M.P., the Vice-Presidents, the Trustees, and Auditors." He said that the Chairman had omitted the loss to the Society in the death of their dear old friend, Mr. Wildsmith, whose memory had been commemorated in a method similar to that now proposed in the case of Mr. George Deal.

Dr. MASTERS, in acknowledging the toast, said that the absence of their President was caused by indisposition, but they would be glad to hear that Sir Julian was now progressing satisfactorily. Though absent in body he was sure Sir Julian Goldsmid would be present with them in spirit. (Cheers.)

Mr. A. SMEE proposed "The Committee and Officers of the Fund," remarking that the stability of the Fund bore testimony to the exertions of those gentlemen. At present they were only a young

institution, but he hoped that before many years were past, instead of £3500 invested in the name of the Trustees, they would have at least £10,000. (Cheers). It would not be many years before they had 120 orphans on the books, and it would require a large reserve fund and a large income to meet all contingencies.

Mr. J. ASSBEE in reply said he must say that he had seldom seen any committee so solicitous for the welfare of any institution as theirs.

Mr. G. BUNYARD proposed the health of "The Local Secretaries," suggesting that gardeners in what might be called "a show place," should place a collecting box in a conspicuous position for the benefit of the fund.

Mr. TURTON replied.

Mr. B. HARDY in complimentary terms asked the company to drink the health of the Chairman.

The CHAIRMAN in responding to the toast announced that the sum required had been nearly raised, and he hoped it would be altogether before the company separated. Nothing gave him greater pleasure than to be amongst gardeners and men who loved gardening. He cast in his lot with gardening early in life, and had never regretted it for a single hour since.

The remaining toasts were "The Visitors" and "The Horticultural Press."

A most enjoyable evening was rendered still more pleasant by the excellent music contributed under Mr. Herbert Schartau by Miss Lizzie Jones, Mr. W. G. Torington, Mr. Harper Kearton and Master Charles Stewart.

NOTES ON TOMATO CULTURE.

It would be a rather difficult matter to say anything new on growing this now popular vegetable, as the different modes of culture have been so well expressed by different growers in the Journal. However, a few lines may perhaps be of some little service to intending growers, old hands need no instruction. To test the best time to sow for good returns I have sown every month in the year, and kept the plants growing without a check, giving each series exactly the same treatment so far as general management goes. Naturally those cropping during the winter months required more attention. The result arrived at was that by sowing early in January the most satisfactory and profitable crops were produced. Soon as the seedlings were up they were placed close to the glass, and when fit to handle potted into large 60's and arranged on shelves again, thus ensuring a sturdy, short-jointed and firm growth, and I may here remark that I believe unless a solid growth is made while the plants are young a foundation is laid for the dreaded disease. Over-forcing and over-feeding in many instances cause disease wrote an eminent authority to me recently, and I feel sure he was right. By the middle of February the young Tomatoes are planted out in span-roofed houses, the borders being made of road scrapings and are firm and shallow; about three stems are allowed to each plant except those near the path, which have only one stem. I must confess to never having had as good results proportionately from plants grown on the single stem system as those grown with three. No feeding is done till the plants are fruiting freely, when they then receive some assistance about twice a week till the end of the season. As a stem exhibits signs of exhaustion a young growth is encouraged from the base to take its place, cutting out the old stem as soon as its crop is finished. By judicious feeding it is astonishing how old plants will continue growing and fruiting. At no time should a crowded growth be allowed, as it necessitates a severe thinning and cripples and otherwise injures the plant. Each young growth not required is best taken out as soon as observed, the strength is then all concentrated in the other and the fruit attains a larger size.

Watering is a very important operation. I believe that in many cases too much water is given, acting in the same way as continual moisture does on Potatoes, causing disease. Syringing the plants after they commence flowering is a practice that I dislike, as I think it predisposes the plants to the propagation of disease. A certain amount of moisture is absolutely necessary to allow the fungus to live and spread, and for that reason anything that would cause a suitable medium for the disease is best avoided as far as possible. By giving plenty of air, watering only when really necessary, maintaining a dry atmosphere, and keeping a little warmth in the pipes, have never had the plants affected by disease. Most people are aware what an important thing in the breeding of animals is selection, and the same applies to Tomatoes. By choosing good fruits from the most prolific plants a very superior strain is acquired. This I have proved over and over again. Nearly all our Tomatoes were saved from a cluster of twenty-two fruits, which weighed 11½ lbs., and the produce is very satisfactory. The variety is a cross between Trophy and Cooper's Prolific. The question is often asked, Which is the most profitable, the smooth or the corrugated variety? My experience is decidedly in favour of the latter,

as they produce double the crop of the former. I will admit that the smooth secures the highest price, but I think it is more than counterbalanced by the extra weight of the corrugated type. I question if anyone has made the growing of Tomatoes pay during the winter months, taking into consideration the firing, labour, &c. I believe the game is not worth the candle, and all the British and Continental growers are of the same opinion. It is all very well to grow them for private purposes, but growing them for market is a different matter altogether, as the cost of production has to be taken into consideration. A very satisfactory feature of Tomato growing is that the demand keeps pace with the supply.—S. T. WRIGHT.

SOME AUTUMN CROCUSES.

In late autumn the garden of hardy plants stands somewhat in need of something to brighten and lighten it up. Should frost

prove that what they know by this name is *Cochicum autumnale*, familiarly known as the Autumn Crocus, but frequently as the Meadow Saffron, although even this is a misnomer.

It is easy enough for the initiated to distinguish the *Colchicum* from the *Crocus*, but the following distinctions given by Wooster in "Alpine Plants," page 59, may be of value to some of my readers. The *Crocus* has only three stamens, the *Colchicum* six. The ovary is below the flower, but in the *Colchicum* it is within it. The *Crocus* has one style and three stigmas, while the *Colchicum* has three distinct styles. I may be asked why I write of these flowers now when the garden is aglow with colour, and when all Nature seems to inculcate the necessity of making the most of the present, and of taking no thought for short dull days which we would fain forget. But after all, as gardening is the "art that doth mend Nature," we have to look forward from season to season, and now is perhaps the best month to order the dry corms, which will in two or three months produce their bright flowers to delight us



FIG. 10.—ADIANTUM BAUSEI.

keep away for longer than usual there will be no lack of Asters and Helianthus and many other tall plants, but the front of the border and the rock garden, however attractive with the greys and greens of the Saxifrages, stand in need of a bit of colouring.

It is at this time that the Crocuses and Colchicums come in to fill up the void. The Colchicums are especial favourites with me, but even the most enthusiastic among the few who grow these in any variety must admit that they cannot exclude the autumn Crocuses from the garden. Each genus has its advantages, and while less able to withstand the vicissitudes of our British autumnal storms, the Crocuses possess a delicacy and refinement somewhat lacking in the most of the Colchicums. These treasures of the garden are becoming better known, but are still rarely met with, and if we ask the majority of our gardening friends if they have autumn Crocuses, the chances are many that they have not, or, if perchance they say they do grow them, on inquiry it generally

with their beauty. Ordered and procured as soon as possible, so that they may not have become weakened by starting into growth, planted about 3 inches deep in a sunny position, well sheltered from strong winds, there will be no difficulty in growing these autumn Crocuses, and when the one or the few bulbs become a large mass, no common object of beauty will be seen in the garden.

As with the early spring species, I do not claim to have an extensive number of varieties in my little garden, and as with these I merely intend to note a few of the cheapest and most easily obtained.

One of the most valuable autumn Crocuses possessing the qualities of cheapness, hardiness, and freedom of blooming, and last, but not least, beauty, is *C. speciosus*, the "blue" autumn Crocus. This flowers in September or the beginning of October, and I can say without the slightest hesitation is one which yields to none in its attractions. The flowers are of a fine purplish blue,

the inside of the petals being striped with deep purple lines, and the beauty of the flower is much enhanced by the rich orange coloured stigmas. The species is a native of the Caucasus and Transylvania, differing but slightly from each other. The flowers are very large, and when fully expanded by the rays of the sun a clump presents a most beautiful object.

Another species less valuable, but distinct enough to have a place, is *C. nudiflorus*, the Naked-flowered Crocus, which is a native of South-western Europe, but has become abundantly naturalised in meadows near Nottingham and in other localities in central England. It has fine, pale, but bright purple long tubed flowers, with orange coloured stigmas.

A very beautiful Crocus, and one which is, in my opinion, intermediate in beauty between *C. speciosus* and *C. nudiflorus*, is *C. longiflorus*, known also as *C. odoratus*, which is, I understand, a native of Italy, and has beautiful rose-lilac flowers appearing shortly after those of *C. speciosus*. This is one of the most beautiful among the species.

C. sativus, the true Saffron, although at one time largely cultivated in England for profit, is comparatively rare in our gardens, a circumstance probably due to the shyness of its flowering in many places. The flowers of this are purple, and it is readily distinguished by the orange coloured stigmas hanging over one side of the flower. This should have a warm sunny position.

C. pulchellus is a beautiful Crocus, said to be a native of Mount Atlas and Belgrade, and the east side of the Bosphorus. This species has large bluish pearl flowers, veined with a darker colour, and with white anthers.

There are some very beautiful white or whitish coloured kinds among these autumn flowering members of the genus. *C. Boryanus* or *Boryi* is one of the finest of these. It was originally found by Bory near Navarino, but appears to be pretty widely distributed over some parts of Asia Minor, the Morea, and the Greek Islands. According to Dean Herbert *C. Ionicus* and *C. Veneris* are identical with *Boryanus*, and Mr. Wooster says *C. caspicus* of Fischer is the same. The flowers appear late in autumn, and are of a fine creamy white with orange yellow throat, the anthers white, and stigmas orange yellow. I do not find *C. Boryanus* very free flowering, but have not yet been able to give it as sunny a position as it should have. *C. ochroleucus*, creamy white and yellow, and *C. Hadriaticus*, pure white, are also very beautiful kinds, which do well here; but I regret that I have no information as to the native habitats of these fine species. There are several other autumn Crocuses in commerce which I have not yet grown, and with which I am not sufficiently acquainted to venture to write of. Some of these are *C. asturicus*, purple lilac; *C. cancellatus*, white, and purple at the base; *C. c. cilicicus* and *C. c. lilacinus*, varieties of this; *C. Clusi*, purple; *C. byzantinus*, purple; *C. serotinus*, lavender; *C. Tourneforti*, delicate rose lilac; and *C. Thomasi*, white and lavender blue.

I have purposely left until the close of these notes my favourite among all I have grown—*C. zonatus*, which has been appropriately called "exquisite," and I know no other adjective more applicable to its most beautiful rose-lilac flowers, with a fine yellow zone at the base of the inside of the petals. This species should be grown everywhere, and I feel sure none who can admire the delicate beauty of these flowers will have cause to regret adding this to his collection.

As "there's ne'er a Rose without a thorn," so there is still a shortcoming in the autumn Crocus—a yellow. There may be one which I know not of, and Nature is so prodigal of her bounties that in all probability this colour will turn up somewhere in Asia, and who knows what Stanley's Mountains of the Moon may yield to enrich our gardens? Could an autumn-flowering yellow Crocus only be added to our gains the late season garden might glow with the brilliancy our spring gardens now possess, and a fresh charm be added to that most fascinating pursuit—lardy plant growing.—S. ARNOTT.

INSECTS OF THE FLOWER GARDEN.

(Continued from page 399, last vol.)

WE come now to consider two important though not large groups of species, which from their peculiarities seem to stand aloof from the other orders of insects, but are slightly related on one side to the beetles, and on the other to the crickets and grasshoppers. Hence, by most of our entomologists they are considered to form two small and distinct orders. Both of these are brought particularly under the notice of gardeners, owing to the majority of the insects frequenting cultivated plants and shrubs both indoors and out, flowers as well as fruit suffering from their attacks, the foliage, too, being sometimes injured. Their mode of procedure is such that killing or removing them is often a troublesome and tedious business. Trapping some of them is a plan that

has its advocates. We could hardly miss the fact that the earwig season is nearing us, since so many cottage and suburban gardens exhibit the inverted flower pots or the scooped out lobster claws designed to ensnare these insects, and which, though unsightly, do answer the purpose. As most gardeners know, the ingenuity with which earwigs discover places of concealment is remarkable. They will hide in the folds of a label or in a strip of matting. A very common trick of theirs is to lurk amongst what are termed amplexicaul leaves, or within leaves that are expanding. Many-petalled flowers also afford them special gratification. Earwigs are occasionally to be found in conservatories, and they can stand a good amount of moist (not dry) heat, but they are more abundant in garden ground. During the last few years complaints have been made of their infesting plants in the kitchen garden, this arising, I presume, from their being more numerous than formerly, so not limiting themselves to the fruit and flowers. Indeed, there were places in 1886 and 1887 that suffered from an earwig plague, the insects entering dwellings, hiding in beds, garments, &c., and regaling themselves upon various articles of food. Still they doubtless prefer flowers to anything else, and of these Roses, Pinks, Carnations, and Dahlias contain most earwigs.

In the order Dermaptera, aptly named from the soft wing-cases of the insects, which are a contrast to those of beetles, though the biting apparatus of the mouth is alike in both groups, the two species best known are the one above referred to—viz., *Forficula auricularia*, and the lesser earwig, *Labia minor*. Both Latin and English names have a significance which requires explanation, for there are still people who are afraid that earwigs may crawl into their ears, and those engaged in garden work run greater risks than other folk. Apprehensions of any serious injury from such an event are, I am convinced, needless, since the insect could not penetrate the drum of the ear. It is a thing that seldom happens. I have, on inquiry, only heard of a single instance, and then the person that was thus "earwigged" had been lying upon grass. Some have suggested that the name was originally "earwing," in allusion to the beautiful wings of the species, the foldings of which have been likened to the convolutions of the ear, but I do not see much resemblance myself. It is a curious fact that though possessed of ample wings the common earwig is very seldom noticed to use them, not even to help itself in making a jump. The forceps at the extremity of the body is chiefly used by these insects in doubling up or extending the wings, and is not of the nature of a weapon—certainly it does not secrete a poison. One entomologist, however, tells us that he observed an earwig bearing along by its forceps a small beetle; but they rarely meddle with other insects, though occasionally guilty of cannibalism if any die in a retreat where several have hidden together.

Probably one chief cause of earwigs proving so troublesome, next to their nocturnal and secluded habits, is the comparative safety they enjoy while in their early stage of growth. The larva or grub of the earwig lives either under ground or beneath stones, and in other places where it is unnoticed. What the food is we are not certain about, most likely it is of a vegetable nature. A very singular fact is that the mother earwig watches over her progeny while they are small, and guards the eggs till hatched. She has been caught in the act of removing them from one place to another. As many earwigs live through the winter months under loose bark, amongst dead leaves, &c., the destruction of them at that time will tend to reduce the spring brood. Some gardeners have killed quantities of these insects by putting about flower beds small tubes, as suggested by the late Mr. Wood, made from the hollow stems of plants, or brown paper, plugged at one end, and placed with the open end downwards, which should be examined every morning and the earwigs shaken out.

The lesser earwig, *Labia minor*, does not unfrequently fly, and parties of these insects have been seen travelling rapidly during twilight, or later, in search of a new feeding place. It is of a lighter colour, and is principally found in hotbeds or amongst manure. Only now and then does a specimen appear on a flower or within a folded leaf, and from our little knowledge of its habits we assume that it is not notably injurious to our gardens.

The Thysanoptera or tassel-winged insects, so called from the hairs which fringe their tiny wings, are terrible pests to our flowers, and their number is beyond all calculation. A single bloom may contain scores, many a one being carried from a flower to the nose of the person inhaling its perfume rather too closely. This is only a part of the annoyance they cause, for when we handle flowers, or even walk only amongst the beds, these insects manage to transfer themselves to the hands, the face, and other parts of the human body. The irritation they give to some people is most painful indeed, far worse than a straightforward bite or sting; it arises from their rapid and peculiar movements over the skin, connected also probably with the fringed wings. I have known them to drive a party of excursionists almost to the verge of

delirium on a warm July day when they were passing some of our market gardens in Kent. In this order there is only a single genus, and the *thrips* is but too familiar to every gardener, though in common talk the final "s" of the name is usually dropped. Possessed of four wings, none of the species seem to fly, but they run swiftly, and also leap by a jerk of the tail. A thrips has no jaws, it feeds itself on the juices of plants by the aid of a short sucker, feasting upon petals, and also upon leaves. These insects not merely disfigure, they frequently kill both flowers and leaves. This is partly from the effect of an exudation they throw off more poisonous to plants than the "honeydew" of the aphid tribe. It is a blackish sticky fluid, deposited in minute drops certainly, but from the quantity of it capable of clogging the pores and so stopping the vital action. Thrips cerealium, the species so troublesome in cornfields, is believed to have attached to its sucking apparatus tiny lancets, by which it cuts up the tissues of cereal flowers; this point, however, is not clear.

The most abundant species is *T. adonidum* (I am afraid no gardener thinks it an *Adonis*), which, small as it is, finds space to display the tints of black, white, red, and yellow. It, like the rest, passes through a larval condition, and the wings are developed gradually. When the thrips occurs in a house there is not much difficulty in exterminating it by fumigation; out of doors, owing to the wandering habits of the bulk, few precautions can be taken against them. Their vitality is remarkable, far exceeding that of a host of insects much larger and apparently much stronger.—
ENTOMOLOGIST.



ALFRED COLOMB AND BENOÎT COMTE.

I SEE that the N.R.S. have coupled together for the future Jean Soupert and Great Mogul. This is as it should be. But I see that they have adopted the same course with Alfred Colomb and Benoît Comte. I cannot see the propriety of this, as these Roses seem to me unquestionably distinct, not only in growth and leaf, which are properly not taken into consideration, but in flower. Benoît Comte is rarely symmetrical in outline, but disfigured for the most part by a pinch in the side, and scarcely opens in its full expansion without showing an eye. Sometimes it does not show these defects, and is then an excellent Rose, but surely the colour is distinct and much brighter, and more nearly approaching to scarlet than that of Alfred Colomb; in fact, I do not overstate the case when I say that I can distinguish the difference 10 yards off. I hope it is not too late for the decision to be reconsidered. I would have sent flowers for comparison, but the terrible rains have beaten every flower into pulp.—DUCKWING.

NATIONAL ROSE SOCIETY, BIRMINGHAM.—JULY 17TH.

ALTHOUGH the reporting of this Exhibition will fall into other hands I could not let it pass away without writing a few short notes on what I believe (having seen them all) to have been the most successful provincial Show that the Society has ever held. Rose growing has increased to a wonderful degree since the early days of the Society, while a number of new and valuable Roses have been added to our gardens, and the strides that the cultivation of the Tea Rose has made is marvellous. In former days a few stands were all that were to be seen, while now they form quite an exhibition by themselves.

THE NUMBER OF FLOWERS SHOWN.—I am not quite certain about the exact quantity, but I know that the entries amounted to nearly 400, and owing to the two previous fine days, which were favourable to the opening of the Roses, there were much fewer withdrawals than usual. Bad weather acts most injuriously in this respect, especially amongst those who are dependent on comparatively few plants for their flowers. Wet and cold weather tells most injuriously. Even where flowers are protected it often happens that in cold weather a bloom makes no progress whatever, and when at last it does open it comes deformed or queer. A large grower can pull off the bad without any qualms of conscience. Not so the small amateur, who sees perhaps the hope of the flock gone, so that the two fine days were a great help to exhibitors, just as the wet days before the Show at the Crystal Palace caused an unusual number of withdrawals.

THE QUALITY OF THE BLOOMS.—Of this there could be no doubt. It had been said that it was a Hybrid Perpetual year, that it was too wet and cold for Teas, but Teas were shown in remarkable cleanliness and beauty, the stands of Messrs. Burnside, Page Roberts, Foster-Melliar, and others amongst the amateurs, and those of Messrs. Prince, Harkness, &c., amongst nurserymen, consisting of flowers most beautifully developed. Another matter which tended to the excellence of the flowers was that now, almost for the first time this season, maiden blooms were thrown in any quantity; the season had been so backward.

After all that they had not been in flower, but now was their turn, and some of the beautiful flowers in Mr. Pemberton's stand were evidences that at last he was able to show in his usual form. Amongst the flowers shown in great beauty were Victor Hugo, Susanne Marie Rodocanachi, Her Majesty, Marie Verdier, Earl of Dufferin, Sir Rowland Hill, Madame Charles Crapelet, Countess of Rosebery, and Duchess of Bedford, while amongst Teas a beautiful triplet of Miss Ethel Brownlow, and some grand blooms of Innocente Pirola in the amateurs' stand were very conspicuous indeed. There was hardly a good variety that was not well represented at this fine Show.

SPECIAL PRIZES.—As will be seen by the report, the challenge trophies remain in the possession of last year's victors, Messrs. Harkness & Sons of Bedale, and Rev. Joseph H. Pemberton. The stand of the former was of very great excellence, and contained amongst others some very beautiful Teas. Since the withdrawal of Mr. T. B. Hall and Mr. E. R. Whitwell from the field of contest, there are as yet no northern growers who even venture to enter the lists. It is a fact much to be regretted, as these northern exhibits added much to the interest; and while one does not grudge Mr. Pemberton his well deserved victory, yet considering that this is called the Northern Exhibition, one would have liked to have seen some good northerner carrying it off; as that was not the case, it has fallen into very worthy hands. He was run very close by Mr. Lindsell, the champion of the year, but he has fought so well and so hard that it was hardly to be expected he would "come up to the last round" quite as fresh as before. Mr. Girdlestone secured an easy victory in winning Lord Calthorpe's 10-guinea cup for Moss Roses, for he was the only exhibitor. When Lord Calthorpe intimated his intention of giving this prize remonstrances were made to him that on the 17th of July it was well-nigh impossible to obtain Moss Roses, and that the exhibits must of necessity be few and not at all worthy of the prize. However, all remonstrances were of no use; but it has fallen out as one expected. The winning stand was a very nice one, but the winner would be the first to acknowledge that it was nothing to what he could have shown a fortnight before.

The National Rose Society's gold medal was awarded with acclamation to the new seedling Rose of Messrs. Alex. Dickson & Sons of Newtownards, the beautiful white Margaret Dickson. It is a flower of very great excellence, well formed, plenty of stuff as the saying is, with well formed deep petals and the most wonderful foliage; the leaves are thick and almost leathery in substance, so that it is not likely to suffer from mildew. It is a cross between Lady Mary Fitzwilliam and Merveille de Lyon, and will in the opinion of many rosarians "put the latter's nose out of joint." I may add that, beautiful as were the three Roses exhibited, they were not to be compared in size to those on which I have already commented at Wirral. Thus three gold medals have this year been awarded for Mrs. Paul, Salamander, and Margaret Dickson, a circumstance which has never before occurred in the history of the National.

It only remains to be said that no better or more convenient place could be selected for a Rose show, that the courtesy and intelligent interest of Mr. Latham made everything pleasant for the exhibitors, and that the coolness of the day contributed to keep the flowers fresh up to the last. The Society is much indebted to the Committee and their able and indefatigable Secretary, Mr. Hugh Nettlefold, for a most pleasant and successful meeting.—D., Deal.

A WONDERFUL display of good blooms, a very large attendance of leading exhibitors, fine weather, and a beautiful home for the Rose Show in the well kept Botanical Gardens, pleased everyone on Thursday last, and it was generally acknowledged to be the best provincial Exhibition the Society has held. The arrangements made by Mr. Latham and his assistants met with general approval, and there was an excellent attendance. Roses generally were of good quality, and stood well till the close of the Exhibition.

In the nurserymen's jubilee class for thirty-six blooms, single trusses, the trophy and £3 (thirteen competitors), Messrs. Harkness & Sons, Bedale, were first with superb blooms of the following:—Back row: Ulrich Brunner, Duchesse de Morny, Camille Bernardin, Mrs. J. Laing, Barthelemy Joubert, Niphotos, Marie Baumann, Captain Christy, Etienne Levet, Madame E. Verdier, Countess of Oxford, Lady Mary Fitzwilliam. Second row: Madame Gabriel Luizet, Charles Lefebvre, Souvenir d'Elise, Général Jacqueminot, La France, Alfred Colomb, Her Majesty, Marie Rady, Innocente Pirola, Horace Vernet, Catherine Mermet, J. Stuart Mill. Front row:—Star of Waltham, Madame C. Kuster, A. K. Williams, Comtesse de Nadaillac, Duke of Connaught, Madame Cusin, Le Havre, The Bride, E. Y. Teas, Princess of Wales, Madame Haussmann, and Merveille de Lyon. Second, the Cranston Nursery Company, Hereford. Third, Messrs. A. Dickson & Sons, Newtownards, Belfast. Fourth, Mr. Frank Cant, Colchester.

In class 1, seventy-two blooms, distinct (five exhibitors), Messrs. Harkness & Sons again took the first prize with very fine blooms. Back row: François Lacharme, Lady Mary Fitzwilliam, Marie Van Houtte, The Bride, Général Jacqueminot, Madame Henry Pereire, A. K. Williams, Her Majesty, Ulrich Brunner, Captain Christy, Marie Baumann, Benoît Comte, Heinrich Schultheis, Exposition de Brie, Mrs. John Laing, Madame Alphonse Lavallée, Madame Eugène Verdier, Madame A. Soupert, Baroness Rothschild, Alfred Dumesnil, La France, Lady Sheffield, Paul Neron. Second row: Madame Montet, Barthelemy Joubert, Devoniansis, Alfred Colomb, Pride of Waltham, E. Y. Teas, Innocente Pirola, Charles Lefebvre, Hippolyte Jamain, Fisher Holmes, C. Mermet,

Horace Vernet, Niphetos, Lord Macaulay, Jean Ducher, Etienne Levet, Madame Berard, Marie Rady, Souvenir d'Elise, Mrs. Jowett, Souvenir de Paul Neron, Caroline Kuster, Le Havre. Front row: Madame C. Joigneaux, Madame Cointet, Ella Gordon, Emilie Hausburg, Harrison Weir, Viscountess Folkestone, Duchesse de Morny, Francisca Kruger, Constantin Tretiakoff, Etoile de Lyon, Beauty of Waltham, Queen of Queens, Camille Bernardin, Madame Cusin, Princess Beatrice, Charles Darwin, Anna Ollivier, Duke of Connaught, Madame Bravy, Dupuy Jamain, Madame de Watteville, Duchess of Bedford, and Marie Van Houtte. Second, the Cranston Nursery Company. Third, Mr. B. R. Cant. Fourth, Messrs. Paul & Son, Cheshunt.

In class 2, thirty-six, distinct, trebles (six exhibits).—First, the Cranston Nursery Company, with a very fine lot—viz., Alfred Colomb, La France, A. K. Williams, Marie Finger, Heinrich Schultheis, Ulrich Brunner, extra fine; grand blooms of Her Majesty, Madame C. Joigneaux, unnamed; Charles Darwin, Dupuy Jamain, Earl Dufferin, Duchesse de Morny, Général Jacqueminot, in grand form; unnamed, Madame Alphonse Lavallée, Countess of Oxford, Lady Sheffield, E. Y. Teas, Jean Ducher, Marie Baumann, Silver Queen, Maurice Bernardin, Comtesse de Serenye, La Rosière, Merveille de Lyon, Duke of Wellington, Marie Verdier, Camille Bernardin, Madame Gabriel Luizet, John Stuart Mill, Baroness Rothschild, Benoit Comte, very fine; M. Etienne Levet, and Madame Charles Wood. Second, Mr. B. R. Cant. Third, Mr. George Prince, Oxford. Fourth, Messrs. Paul & Son, Cheshunt.

In class 3, thirty-six blooms, distinct (six exhibits), first, Mr. Henry Merryweather, with superb blooms—viz., Camille Bernardin, Dupuy Jamain, La France, Sénateur Vaisse, Her Majesty, Horace Vernet, François Michelin, Etienne Levet, Marie Baumann, Heinrich Schultheis, A. K. Williams, Lady Mary Fitzwilliam. Second row: Fisher Holmes, Susanne Rodocanachi, Camille Bernardin, Baroness Rothschild, Marshall P. Wilder, Viscountess Folkestone, Duke of Wellington, Countess of Rosebery, Mrs. John Laing, Gloire de Margottin (very fine), Capt. Christy, Marquise de Castellane. Front row: A. Colomb, Prince Arthur, Merveille de Lyon, Général Jacqueminot, Violette Bouyer, Madame Victor Verdier, Madame G. Luizet, Marie Rady, Marie Baumann, Marie Finger, Duke of Edinburgh. Second, Messrs. Perkins & Son, Coventry; third, Messrs. Jefferies & Son, Cirencester; fourth, Mr. Rumsey, Waltham.

In class 4, eighteen trebles (five exhibits), first, Messrs. Jefferies and Son, with La France, Comte Raimbaud, Her Majesty (very fine), Horace Vernet, Merveille de Lyon, Prince Arthur, Mrs. John Laing, Ulrich Brunner (very fine), Viscountess Folkestone, A. K. Williams, Madame Marie Verdier, Marie Baumann, Baroness Rothschild, Alfred Colomb, Captain Christy, Charles Lamb, and very fine; Marie Finger, and Countess of Oxford, very fine and richly coloured. Second, Mr. Hy. Merryweather, with very fine blooms of Countess of Rosebery, Viscountess Folkestone, Her Majesty, Ulrich Brunner, Mrs. John Laing, and others. Third, Messrs. Perkins & Sons; fourth, Mr. Rumsey.

In the amateurs' classes the following awards were made:—The jubilee prizes, for twenty-four distinct varieties, first prize, the trophy, and £3, there were nine exhibitors. The Rev. J. H. Pemberton's fine first prize blooms comprised—Front row: Ulrich Brunner, Louis Van Houtte, Magna Charta, Madame Charles Crapelet, Heinrich Schultheis, Charles Lefebvre, François Michelin, Duchess of Bedford. Second row: A. K. Williams, Lady Mary Fitzwilliam, Auguste Rigotard, Marie Van Houtte, Marie Baumann, Souvenir d'un Ami, Madame Victor Verdier, Countess of Rosebery. Back row: Madame Lambard, Exposition de Brie, Her Majesty, Lady Arthur Hill, Baroness Rothschild, Comte Raimbaud, Mrs. John Laing, and Innocente Pirola. Second, Mr. E. B. Lindsell, Hitchin; third, Rev. Hugh A. Berners; fourth, Mr. J. Pulley.

For thirty-six blooms, distinct (first prize a very handsome silver cup, value £10 10s., presented by the Right Hon. Joseph Chamberlain, M.P.) with a capital stand of Etienne Levet, A. K. Williams, Countess of Oxford, Louis Van Houtte, Magna Charta, Marie Baumann, Ulrich Brunner, Dr. Andry, Heinrich Schultheis, Devienne Lamy, Pride of Waltham, Madame Charles Crapelet. Second row: Charles Lefebvre, Grandeur of Cheshunt, Victor Hugo, jun., Baroness Rothschild, William Warden (?), Her Majesty, Duchess of Bedford, Lady Mary Fitzwilliam, Mrs. John Laing, and Susanne Rodocanachi. Front row: Marie Verdier, Auguste Rigotard, François Michelin, name lost, Caroline Kuster, Le Havre, Souvenir d'un Ami, Comtesse de Morny, Merveille de Lyon, Lady Helen Stewart (a beautifully shaded bloom), La France, and Comte Raimbaud. Second, Mr. E. B. Lindsell; third, Mr. S. P. Budd, Bath. In the class for twelve trebles the Rev. J. H. Pemberton was first, and Mr. E. B. Lindsell second.

In class 7, for twenty-four distinct varieties (first prize a silver salver, value ten guineas, presented by A. H. Griffiths, Esq.), there were ten exhibitors, and close competing. Mr. Arthur Whitton, Bedale, his best blooms Ulrich Brunner, Etienne Levet, Marie Levet, Marquise de Castellane, Innocente Pirola, Dupuy Jamain, Souvenir d'Elise Vardon, Lady Sheffield, Duke of Edinburgh, Violette Bouyer, and Prince Arthur; second, Mr. Alfred Slaughter, Steyning, Sussex; third, the Rev. A. Foster-Melliar, Sproughton Rectory, Ipswich; fourth, Mr. Wm. Boyes, Derby.

Class 8, twelve single blooms (six exhibitors).—First, Mr. Edward Mawley, Berkhamstead, with a stand of very fine blooms—namely, a grand bloom of Her Majesty, Sir Rowland Hill, La France, Marie Rady, Duke of Edinburgh, Marie Finger, E. Y. Teas, Baroness Rothschild, Ulrich Brunner, J. S. Mill, Duke of Teck, and Star of Waltham.

Second, Mr. W. Whittle, Belgrave, Leicester. Third, the Rev. C. P. Roberts, Scole Rectory. Fourth, Mr. R. Ramsden, Chadwick Manor, Knowle.

Class 9, six distinct blooms.—First, Rev. F. S. Taylor, Evesham. Second, Mr. J. Rawlins, Cirencester. Third, Mr. H. D. Edwards, Mackworth, Bexley. Fourth, Rev. F. H. Gall, Hitchin. In the local amateurs' classes for twelve blooms.—First, Mr. A. H. Griffiths, Edgbaston. Second, Mr. James Richards, Edgbaston. Third, Mr. W. C. B. Cane, Harborne. For six blooms.—First, Mr. Robert Austin, Kings Heath, Second, Mr. J. Smith, Hall Green. Third, Mr. H. Bloomer, Kings Norton.

In the class for twelve new Roses Messrs. Paul & Son, Cheshunt, were first with H.P. Jules Desponds, which promises to be an acquisition, Lady Alice, John D. Pawle, Edouard Michel, Souvenir de S. A. Prince, Marie Margot, Lady Arthur Hill, H.P. Scipion Cochet, Dowager Duchess of Marlborough and two promising Teas, Ernest Metz and Mrs. James Wilson. Second, Messrs. A. Dickson and Sons, Newtownards, their best kinds being T. W. Girdlestone, a fine variety, and Duchess of Albany, a highly coloured La France. Third, Mr. B. R. Cant.

Lord Calthorpe, who owns the greater part of the Edgbaston district, gave a handsome silver eup, value ten guineas, for a collection of Moss Roses. Three boxes were staged, Mr. T. W. Girdlestone securing the eup with a well set up good collection, the old crested Moss being prominent amongst them. Some beautiful bouquets of Roses were exhibited by ladies.

In the class for twelve Teas or Noisettes, three trusses of each, open class, there were ten exhibitors and a close competition. First, Messrs. Harkness & Sons, with a superb stand. Second, Rev. F. R. Burnside. Third, Mr. B. R. Cant. Fourth, Mr. George Prince. For eighteen Teas or Noisettes, single trusses (nurserymen), first, Mr. George Prince, with very fine blooms—viz., Catherine Mermet, Edith Gifford, Madame Cusin, Souvenir de S. A. Prince, Princess of Wales, Souvenir d'Elise Vardon, Innocente Pirola, Souvenir d'un Ami, Madame Hoste, Anna Ollivier, M. Niel, Niphetos, Rubens, Alba Rosea, Comtesse de Nadaillac, very rich in orange tint; Marie Van Houtte, very fine; The Bride and Sunset, also very fine. Second, Messrs. Harkness & Sons. Third, Mr. Frank Cant. Fourth, Mr. B. R. Cant. For twelve Teas, single (nurserymen), Mr. Henry Merryweather, with a fine stand of Catherine Mermet, Marie Van Houtte, Innocente Pirola, Madame Hoste, Francisca Kruger, Comtesse de Nadaillac, Niphetos, Caroline Kuster, Souvenir d'un Ami, Jean Ducher, and Perle des Jardins. Second, the Cranston Nursery Company. Third, Messrs. Jefferies & Son. Fourth, Mr. John Mattock, Oxford. For twelve Teas or Noisettes (amateurs), eight exhibitors, first, the Rev. F. R. Burnside, with a very fine stand of The Bride, Francisca Kruger, Innocente Pirola, Madame Cusin, Innocente Pirola, Comtesse de Nadaillac, Catherine Mermet, Souvenir d'Elise, Madame Hoste, Edith Gifford, Marie Van Houtte, Souvenir d'un Ami, and Anna Ollivier. The Tea Roses were numerous and fine generally, and were a beautiful feature of the Show. The first and second prize lot of trebles were very fine, and Mr. B. R. Cant's a superb third.

For six new Roses, first, the Rev. J. H. Pemberton. Second, the Rev. A. Foster-Melliar. For twelve single trusses of any yellow Roses (six exhibitors), first, the Cranston Nursery Company, with Marie Van Houtte, very fine. Second, Mr. George Prince, with Francisca Kruger. Third, Mr. B. R. Cant, with Madame Hoste. Twelve single trusses of any white Rose (thirteen exhibits). The Teas were very strong here, some fine stands of Merveille de Lyon standing no chance. First, the Rev. F. R. Burnside, with Innocente Pirola. Second, Messrs. D. & W. Croll, with grand blooms of Rubens. Third, Mr. B. R. Cant, with The Bride. Messrs. Harkness & Sons staged in this class a fine twelve of Lady Alice. Thirteen exhibits in this class.

Twelve single trusses of any crimson Rose (fifteen exhibits).—First, the Cranston Nursery Company, with a grand stand of Alfred Colomb. Second, Messrs. R. Mack & Son, with A. K. Williams. Third, Messrs. D. & W. Croll, with E. Y. Teas. In this class the Cranston Company had a superb twelve Ulrich Brunner. For six trusses of any one variety of H.P. and six of any one variety of Tea or Noisette there were twelve exhibits. First, Messrs. Harkness & Sons, with H.P. Horace Vernet and Tea Innocente Pirola, all very fine blooms. Second, Messrs. James Cocker & Son, Aberdeen, with wonderfully fine blooms of La France and Tea Madame Bravy. Third, the Cranston Nursery Company, with Alfred Colomb and Catherine Mermet, Tea.

The gold medal for three blooms of any new seedling Rose, not yet in commerce was well won by Messrs. A. Dickson & Sons, Newtownards, with Margaret Dickson, a lovely white flower of great substance and with thick leathery foliage. Other seedlings staged in competition for the gold medal were Mrs. Arthur Wilson, from Mr. G. Swales, Beverley; a crimson seedling from Mr. F. Cant and Bourbon Mrs. Paul; and H.P. J. B. Hayward, bright in colour, from Messrs. Paul and Son, Cheshunt.

Mr. G. B. Lindsell won the premier for best H.P., Her Majesty. Best Tea or Noisette, Innocente Pirola, by Mr. A. Whitton, Bedale.

A beautifully set up stand of Roses by Messrs. Croll of Dundee was by a great many very much admired, and shows the blooms off to so much advantage to visitors. In this arrangement the names are so easily seen. With a great many of the exhibitors naming is done hurriedly, and not very legibly, and it is difficult to see the names, and in some instances these are fastened into wires under the blooms. Perhaps some Rose exhibitor will soon invent a neat and more serviceable arrangement for showing the names more prominently, and he will get the blessings at all events of those who have to report Rose exhibitions.

NEW BRIGHTON.—JULY 12TH.

THIS Rose show was absolutely unique in its character. At many other shows—Wirral, Gloucester, &c.—stalls are presided over by ladies where Roses are sold for the benefit of some charity or other, generally for hospitals, and partly those for children. It is a pretty thought to associate the Rose with the alleviation of the sufferings of childhood, for how children love flowers, wild or cultivated, but at New Brighton the whole object of the Show is the furtherance of the Children's Hospital at Wallasey, and all the surplus, after paying expenses, is devoted to that purpose. That energetic and thorough rosarian, Mr. Bell, is the prime mover in it. He throws open his grounds, provides tennis for some, and a hearty welcome for all; and, therefore, when, as this year, it rained nearly all day, it is not merely that it is a disappointment to the organisers but a considerable loss to the hospital.

Although the Show is a small one, it always has the effect of bringing together some admirable Roses, both from amateurs and growers for sale, and this year was no exception to the rule, the leading stands in both classes being of great excellence. In the nurserymen's class for forty-eight blooms, the English Fruit and Rose Co. (Cranston's) was first with the following Roses in fine order—John Stuart Mill, La France, Alfred Colomb, Mrs. John Laing, Ulrich Brunner, Her Majesty, A. K. Williams, Lælia, Madame Victor Verdier, Lady Sheffield, Horace Vernet, Pride of Waltham, Marie Baumann, Baroness Rothschild, Madame Eugène Verdier, Sénateur Vaisse, Marquise de Castellane, Louis Van Houtte, Rubens, Beauty of Waltham E. Y. Teas, Earl of Pembroke, Marie Van Houtte, Comtesse d'Oxford, François Michelon, Prince Arthur, Viscountess Folkestone, Général Jacquemin, Merveille de Lyon, Barthélemy Joubert, Madame Gabriel Luizet, Comtesse de Serenye, Duke of Edinburgh, Duchess of Bedford, Heinrich Schultheis, Madame Charles Wood, Emilie Hausburg, Comte de Raimbaud, Camille Bernardin, Madame Alphonse Lavallée, Madlle. Eugène Verdier, Charles Lefebvre, Marie Verdier, Lady Helen Stuart, Susanne Marie Rodocanachi, Le Havre, and Etienne Levé. Messrs. Harkness & Son of Bedale were a good second, and Messrs. Merryweather of Southwell, third. In the class for twenty-four singles (amateurs), Mr. E. B. Lindsell of Beaston, Hitchin, was first with blooms of the same exquisite finish he has made us familiar with this year. They were Ulrich Brunner, La France, Alfred Colomb, A. K. Williams, François Michelon, Beauty of Waltham, Merveille de Lyon, Marie Baumann, Her Majesty, Prince Arthur, Marie Verdier, Charles Lefebvre, Horace Vernet, Alfred Colomb, Mrs. John Laing, Dr. Andry, Countess of Rosebery, Marie Baumann, Etienne Levé, Maurice Bernardin, Louis Van Houtte, Marquise de Castellane, Fisher Holmes, Earl of Dufferin, and Lady Sheffield.

In eighteens, distinct, Mr. Lindsell was again first with Ulrich Brunner, La France, Alfred Colomb, Merveille de Lyon, A. K. Williams, Captain Christy, Dr. Andry, Countess of Rosebery, Louis Van Houtte, Marie Baumann, Mrs. John Laing, Baron Rothschild, Abel Carrière, Dupuy Jamain, Lady Sheffield, and Victor Hugo; Mr. Churton was second. In the class for twelve Teas, nurserymen, Messrs. Merryweather were first, Souvenir d'un Ami, Madame Lambard, Etoile de Lyon, Catherine Mermet, Souvenir d'Elise Vardon, Souvenir de Thérèse Levé, The Bride, and Souvenir de Victor Hugo, Comtesse de Nadaillac, Anna Ollivier, Madame de Watteville, and Madame Hoste; the English Fruit and Rose Company were second. In class for twelve Teas, amateurs, Mr. Lindsell was first with Comtesse de Nadaillac, The Bride, Madame Cusin, Caroline Kuster, Niphotos, Souvenir d'Elise Vardon, Princess of Wales, Catherine Mermet, Souvenir d'un Ami, Innocente Pirola, President, Anna Ollivier. In the class for twelves, amateurs, Mr. Bulley was first, Dupuy Jamain, Ulrich Brunner, Duchesse de Morny, Baroness Rothschild, Etienne Levé, A. K. Williams, Captain Christy, Louis Van Houtte, Duke of Wellington, Le Havre, Charles Lefebvre, and Rosieriste Jacobs. In the class for six, Mr. W. Holland was first with La France, Prince Arthur, Marie Baumann, Gabriel Luizet, Ulrich Brunner, and Le Havre. In the class for the best twelve of any one Rose, the English Fruit and Rose Company was first with a beautiful stand of Alfred Colomb, little inferior, if at all, to those exhibited at Gloucester; Messrs. Harkness & Sons were second with a beautiful box of Mrs. John Laing.

There were some beautiful stands of hardy herbaceous flowers shown, Messrs. Dicksons of Chester sending a fine lot, not for competition; and Messrs. Bell gaining first for a very pretty selection. These tend to make a pleasing variety in these northern Rose shows.—D., Deal.

SAXIFRAGA COCHLEARIS.

THIS is a graceful species belonging to the crustaceous section of the above genus, forming compact clusters of rosettes, and producing elegantly formed plumes of snowy white blossoms. Though this species may usually be regarded as a free bloomer, I think it has done far better this year than I have noticed for several seasons past, and adorned with its pure white flowers it forms one of the most beautiful of its tribe. In its general aspect, too, it is exceedingly pleasing, by reason of its delicate grace. Indeed few members of this section are better worth being grown in large masses on the rockwork than this. Few species are more easily or readily increased, for it produces offsets in considerable quantity, hence the greater wonder it is not more frequently seen in large patches. Like many others it delights in

a loamy soil freely mingled with sharp grit, or old mortar rubbish, and well decayed manure; this last is not generally recommended, but I have not the slightest doubt that the well-flowered specimen, referred to by these remarks, owes not a little of its vigour and freedom of flowering to a somewhat liberal application of manure.—J. H. E.



MEMORIAL TO THE LATE MR. B. S. WILLIAMS.—A meeting was held in the offices of the Gardeners' Royal Benevolent Institution, Parliament Street, on Monday, July 21st, to consider the proposed memorial to the late Mr. B. S. Williams of Upper Holloway. Several resolutions were passed, and particulars of the form which the memorial will take will shortly be published.

— THE WEATHER following the fine days early in the past week was distinguished by severe storms and heavy rain, which caused much damage to farm and garden crops in many districts. In the immediate neighbourhood of Swanley alone it is reported that over £1000 worth of Raspberries and other fruits have been destroyed or greatly damaged. On Thursday the rainfall was excessive. At Slough Mr. H. Turner states his gauge registered 3.68 inches, and at Bisley Mr. Gregory recorded 2½ inches in forty minutes, exceeding what was registered at Wimbledon eighteen years ago—namely, 1¾ inch in seventy-five minutes. The weather has been somewhat finer since, but is still changeable.

— THE ESSEX FIELD CLUB announce that a meeting will be held on Saturday, July 26th next, on Tyler's Common, when the northern part of Upminster parish will be visited, and the party will be received at Upminster Hall by Mr. and Mrs. G. P. Hope. The members will assemble at Harold Wood Station at 3.30 P.M., and will be under the direction of Mr. Walter Crouch, with Prof. Boulger as botanical referee. Further particulars can be had from the Hon. Sec., Mr. B. G. Cole, 7, Knighton Villas, Buckhurst Hill, Essex.

— THE DEMAND FOR PEACHES.—In our article on this subject last week Dartford was mentioned as the nearest station to Bexley Heath, where Mr. Burton grows such extraordinary crops. We were misinformed. Bexley is the nearest station, and at a little more than a mile from Mr. Burton's residence in Erith Road.

— AN EXAMPLE WORTH FOLLOWING.—There is in the city of York a Society of Old Florists, who make florists' flowers their chief consideration, and the Society has had an unbroken existence of over a hundred years. Two well-known and good old florists in the city of York, Messrs. Douglas and Cowper, are still active members, and their lives have been long ones amongst their pet flowers. "The Ancient Society of York Florists" recently held a flower service in the pretty little church of Osbaldwick, close to York, and a collection of nearly £3 was made for the benefit of the Gardeners' Royal Benevolent Institution. Every little helps, and more of such excellent helps from successful flower show societies would be gladly received by the Benevolent or Gardeners' Orphan Fund Societies.—D.

— DISSOLUTION OF PARTNERSHIP.—Messrs. John Grigor & Co., nurserymen, Forres, intimate that they have dissolved partnership, and disposed of their business to Mr. William Wiseman, who for many years has acted as their manager, and who will carry on the business under his own name and on his own responsibility. Mr. Wiseman will receive and make payment of all accounts due to or by the late firm. All cheques should be made payable and all letters should be addressed to him.

— DEATH OF MR. JOHN RALFS OF PENZANCE.—Mr. Hy. Mount, Trengwainton Gardens, Penzance, sends us the following paragraph from a local paper. "We regret to announce the death of Mr. John Ralfe, the veteran botanist, which occurred, July 14th, at his rooms at St. Clare Street. For the last two years he had been in feeble health, and of late his mental and physical infirmities had rapidly increased. For many months he had been confined to his house, and had been quite unable to engage in the pursuits to which he was at one time devoted. Mr. Ralfe was the second son of

the late Mr. Samuel Ralfe, of Munddiford, Christchurch, and was born on September 13th, 1807, near Southampton, his mother being at the time on a visit to her parents. He was educated privately at Bishops Waltham and Romsey, and, leaving school at the age of eighteen, was articled to a surgeon at Southampton. He subsequently found his way to Winchester, where he 'walked the hospital' for about two years. In 1832 he passed his final examination, and was specially commended by the presiding examiner for the intimate knowledge of the science of botany which his answers displayed. For a short time Mr. Ralfe practised as a surgeon in Shoreditch, but soon after his marriage with a Miss Newman he threw up his practice and went to reside at Torquay. After wandering from place to place for a few years he came to Penzance in 1837, and has resided here ever since. He has long been known as one of the most distinguished of English botanists, and was in constant correspondence with experts in this branch of science, not only in England, but in America and the principal European countries. He was the author of many important works, including 'The British Desmidiæ,' and 'The Flora of West Cornwall' (a manuscript work now in the Penzance Library). At the time of his death Mr. Ralfe was a member of the Penzance Library Committee, a position which he had held during the greater part of the time covered by his residence in Penzance. He was also a member of the Penzance Natural History and Antiquarian Society, the transactions of which contain not a few important papers from his pen. Last year he was elected Honorary Fellow of the Royal Microscopic Society of Great Britain. The funeral will take place on Thursday at the Penzance cemetery, leaving the house at three."

— GARDENING APPOINTMENT.—Mr. Charles Slade, late gardener to the Marquis of Hertford, Ragley Park, Alcester, Warwickshire, has succeeded Mr. Gleeson as gardener to the Duke of Newcastle, Worksop, Notts.

— DRIP FROM THE RAFTERS IN PLANT HOUSES.—In ordinary houses it is very difficult to prevent drip from the rafters falling more or less into pans and baskets suspended from the roof. A cross-bar, or even a nail used for hanging blocks or baskets upon, will convey large quantities of condensed moisture to the plants. Under these circumstances such plants as Orchids are often too wet, in fact they are kept in a constant state of saturation, and seldom flourish satisfactorily. We have been troubled a good deal during several years in this way, but have now almost rendered our houses free from drip. We had long strips of zinc cut 1½ or 2 inches wide, according to the width of the rafters, and thoroughly painted them, and then tacked them below the rafters with small copper nails. Each side was slightly bent up towards the glass, which conveyed all the moisture that fell from the roof down to the eaves. The remedy was scarcely complete until we arranged on the eaves a miniature spout to receive the water conveyed down from the rafters.—O. G.

— STRAWBERRY LAXTON'S NOBLE.—In last week's number of *Journal of Horticulture* I was asked by "T. C." to give my opinion on Laxton's Noble Strawberry. I have pleasure in saying that I find Noble far the best early forcing Strawberry I have ever tried. With us the plant is a strong, free, and robust grower, with a hardy constitution, an abundant bearer, and is remarkably free from mildew and green fly during the whole of the forcing season. We forced 300 plants last year, 1000 this year, and are at present preparing 2000 for next season. This fact will show the value we set upon the "gay deceiver." Last season our first plants were started in an early Peach house about the middle of December. These were in flower on February 8th, and the first fruit was ripe on March 4th. From that date we had Noble ripe almost daily until the end of May. Although most of the Strawberries were sent to London in the usual family garden hampers, I have no complaint as to its flavour or bad travelling. On the other hand, my employer asked me the name of the "splendid Strawberry" I had been sending. Telling him, I asked him his opinion about its flavour. The reply was, "Very good, they were much admired." In order to further test its travelling capabilities I sent a dish of it to the Edinburgh spring Show, requesting that I might be informed as to the condition in which it arrived. The reply was "Perfect in every respect, probably the grandest dish of Strawberries ever seen in Scotland." The above quotations will suffice to show that Noble is not always a bad traveller.—J. McINDOE.

— TRILLIUM SESSILE, VAR. CALIFORNICUM.—The genus Trillium contains several attractive garden plants. Trillium grandiflorum, the large, white-flowered species of the Eastern and Northern States, is the

most beautiful of them, and when once established in a suitable position it is not excelled in beauty by any spring flowering herb. The Painted Trillium, as Trillium erythrocarpum is called on account of the bright purple-rose coloured markings which appear on the lower part of the petals, is hardly less beautiful, although the flowers are considerably smaller and much more modest than those of the better known species referred to above. Another plant of this genus, of first-rate value as a garden plant, has been brought into cultivation in recent years. It is the Pacific coast form of a widely distributed eastern species, Trillium sessile, found from Pennsylvania and Wisconsin to Florida and Alabama. The western form of this plant, known as variety californicum, is widely distributed through the northern part of California west of the Sierra Nevada, and extends into Oregon. Trillium sessile, var. californicum, is a stout plant, with broadly rhombic-ovate leaves, varying from 3 to 6 inches in length, lanceolate, acute, erect sepals, and oblong or rhombic-obovate petals, which vary in length from 1 to 4 inches. These differ in colour on different plants from purple to pure white, and at first are nearly upright, becoming reflexed above the middle when the flower is fully expanded. The form with pure white petals is the handsomest and most desirable as a garden plant. The Pacific coast Trillium, like the other species in the genus, is most satisfactory when it is planted in deep moist soil in the shade of deciduous trees; that is, where it can enjoy early in the season or during the blooming period full exposure to the light, and where later it can be protected by the leaves of the overhanging trees from the full blaze of the sun. Trilliums should be planted early in the autumn, or not later than the 1st of October, if good flowers are expected from them the following spring. They do not show, however, what they are really capable of until they have been allowed to grow undisturbed in the same spot during three or four years and have become well established. Then, if the soil in which they are planted suits them, and the situation is a favourable one, they form broad masses of immense leaves, and produce flowers of large size and surprising beauty.—(*American Garden and Forest*.)

ABUTILONS.

THESE plants are very showy, free growing, and easily cultivated. They are alike useful for ornament in the greenhouse and conservatory, for affording flowers for cutting, and for forming beds in the outside garden. The taller varieties are seen to great advantage trained to wires under roof rafters, not having the wires further from the glass than a foot, whilst as pillar plants they are effective, their drooping bell-shaped flowers in either case being seen to singular advantage. Whether as roof or pillar plants they are best allowed to grow rather loosely, so that the side branches may droop down, and when they are becoming too numerous they may be thinned, a convenient method being to cut the flowered sprays back to a few joints from their origin, which serves the purpose of keeping the plants well home as well as affording a succession or continuance of bloom, the sprays loosely arranged in large vases having a very fine effect. Crowding, however, must be avoided, timely thinning and regulation of the growths being practised in due course and with discretion, avoiding stiffness or formality as prejudicial alike to freedom of bloom and effect.

As roof or pillar plants Abutilons are perhaps best planted out. They succeed, however, very well in pots, which must be proportionate in size to the plant required. They give much less trouble in watering when planted out than if grown in pots. In the latter they require feeding with liquid manure to maintain them in good foliage, and even then they do not attain to the freedom of growth and fulness of bloom of those planted out. A border of 2 feet width and similar depth well drained, as abundance of water and food supplies is required when they are in free growth, with a compost of equal parts fibrous loam, leaf soil, and peat, with about a sixth of drift or crystal sand put in rather firmly, so as to induce a stardy free-flowering habit, will grow these plants to perfection. Continually pouring on water is not watering but drowning, making the soil sodden and sour, to the destruction of the soft roots and small fibres, the plant becoming sickly and collapsing. Overdryness on the other hand, if not so pernicious as overwatering, causes a check to growth, a loss very often of bloom, and always a loss of foliage, more or less detracting from the appearance of the plants. The right time to supply water is when the soil is becoming dry, and before it is so dry as to cause the foliage to become limp or flag afford a thorough supply, there being no fear of overwatering a plant when it is dry. There is danger, however, of giving a check that may bring down all or most of the flower buds if the watering is delayed too long, or water is applied at a much less temperature than that in which the plants are growing, or if over-strong manurial matter be given, which destroys the younger, softer, and more

active roots or feeders. These are matters that may not often burden the careful cultivator, but they do occur nevertheless, though the cause of disaster is not often attributed to errors of culture.

Planted-out Abutilons will flower continuously if they have a temperature of 45° to 50° assured to them, the situation being light, and care being taken to keep up a succession of flowering wood; but they are all the better for a rest in winter, the soil then being kept dry, but not so dry as to impair the vitality of the plants. If the wood shrivels it is too dry, which is not resting but starving plants to death. It is needless expecting such to break as strongly and make as vigorous growth as those that have been granted rational treatment. In February the plants may be cut back, each growth to a few joints of the old wood, and where extension is required firm well-ripened wood can be trained-in to fill it, merely cutting away their unripe points. Old worn-out wood may be

surface. The foliage and bloom will show the benefit in due course. The plants will come into flower in a few weeks, and keep on right away through the summer and autumn, if not greater part of the winter, the house of course being kept as before stated at a minimum temperature of 45° to 50°.

Abutilons also form magnificent standards. The plants should be trained up with a single and straight stem to the height required, they appearing to great advantage when on 4 feet 6 inches to 6 feet stems for conservatory, whilst plants with 2 feet stems are charming for table decoration. Pots of 8 inches diameter will hold sufficiently large plants for table, but for the larger and taller plants 12-inch pots are little enough. The plants are allowed to grow somewhat taller than the intended height of stem, so as to get solidified growth to where the heading is to take place, and then the heads are cut clean off, all laterals or side growths being rubbed off on the stem when quite young, leaving the leaves at



FIG. 11.—DAVALLIA FœNICULACEA.

displaced in a similar manner—i.e., cutting out the old and laying-in the young wood. Plants that become bare at the base may be cut down, they breaking freely from the old wood. After pruning a gentle sprinkling over the foliage will encourage a speedy and regular break, and when fresh growth is made the plants, if in pots, may be repotted, picking away the soil at the sides and bottom of the ball, so as to reduce them about a third, which, if they are to be returned to the same size of pot, will admit some fresh soil at the base and sides, the roots being cut close back. Those planted out should have the soil removed from amongst the roots at some little distance from the stem, so as not to disturb the fibrous or main roots at the collar, and if in compartments the soil may be taken out at the sides, the roots cut back, and fresh soil added, in all cases making it moderately firm, for which it must be in a medium state as to moisture. Avoid soil that is very dry or very wet. Water carefully until the plants have made fresh roots, and indicate possession of the soil by pushing fresh growths freely, then water thoroughly as required, and feed with liquid manure or artificials, applied in a surface dressing of light lumpy decomposing material, such as old cowdung, which will attract the roots to the

their base, as they help in a measure to thicken the stem as it advances in height, relying on the uppermost two or three growths for the formation of the head. Stop those when they have two or three leaves, merely taking out the points of the shoots, and continue this as fresh growth is made until the plants have a dozen or more shoots, when they may be allowed to flower. This being effected by midsummer, as it will if one-year-old plants are selected, they being trained the previous year to form the stem desired, the plants will afford a fine display of bloom, and being seen on a level with the eye are very pleasing, and will keep on flowering in a suitable temperature until winter. It is desirable to give them a few weeks' rest by keeping them drier and cooler, and from the middle of February to early March they may be pruned, cutting back to well ripened wood, the weak wood being cut away, and others may be left of such length as will form symmetrical heads, two or three joints of wood being ample to leave on plants that have well-furnished heads, or when a compact head is desired. The plants may be given a little extra warmth to start them into growth, damping occasionally, and when pushing fresh growths disrooting and repotting.

Stopping may be resorted to when the growths are a few inches long, or if early flowers are wanted the plants may be allowed to flower at once; if some are treated that way, whilst others are pinched, a succession of bloom will be secured. The pinched plants, however, form the finest specimens, shifting them into large pots immediately after they push a little growth after the last stopping, and when the roots have possession of the fresh soil feeding with liquid manure. Other plants treated similarly in a cool or ordinary greenhouse will afford a fine display by August, and during the late summer and autumn months. Neat bamboo stakes to the stems will be necessary for the support of the heads.

The plants intended for table decoration must be well stopped, and must be kept in comparatively small pots and firm soil, well enriched with some fertiliser to induce a sturdy well-furnished floriferous habit. Young plants of the previous spring or autumn struck stock are suitable for this purpose, and being duly stopped will form heads quite large enough by August. They should be grown in a low-roofed house or pit where they can be accorded plenty of light. When they become old and stunted they may be discarded for young plants, but the older plants are more floriferous than young, and in every way preferable for early flowering, as young plants cannot be had with a sufficiently furnished head before summer is well advanced.

For general decorative purposes Abutilons may be grown in almost any shape. Pyramids may be formed by stopping the lead at about every foot of growth, and the side growths to 6 inches, keeping them from flowering each year until a good well furnished habit is attained, and then allow them to flower. It is of great importance that an equalisation of growth be attained, therefore gross irregularities must be cut away unflinchingly, seeking to apportion the vigour as far as practicable throughout all parts, having the plants as well furnished at the base as at the summit. Well grown specimens rival, if they do not excel, Fuchsias in picturesque loveliness.

Useful decorative plants are raised from cuttings of the growing points, choosing vigorous examples early in spring. The cuttings strike readily in a close frame stood in a Cucumber pit, if a gentle bottom heat is afforded. They may either be inserted singly in thumb pots or be placed just clear of each other around the sides of a 6-inch pot, repotting them in the latter case so soon as they are rooted, and keep them rather close until established. I prefer the single pot, and so soon as the cuttings are rooted remove them to shelves where they will be just clear of the glass. When inured to the air of the house and the pots full of roots shift into 4-inch pots, continuing in a gentle warmth and light position until established, when they may be moved to a cooler house, but keeping rather close so as not to give a severe check. A span-roofed house or pit is best, in which the plants can have a cool moist base to stand on, and where they can be near the glass without touching it. The plants must also have plenty of space sideways, and as these make very handsome decorative plants they must be given every encouragement in the shape of a little artificial manure mixed with the first and all potting compost, and a sprinkling on the surface of the pots about every ten days, just a pinch between the finger and thumb, evenly disposing it on the surface for the waterings to carry down to the roots. Shift from 4 to 6-inch pots, and if all has gone well the plants will be ready for transferring to 8-inch pots early in June, always allowing them to fill the pots with roots, but before they become matted shift into larger pots. These—viz., 8-inch pots—are the size they are set to bloom in, and the plants being grown on in a cool house in plenty of light they will branch from the base, the plants being trained with a single stem, and so be furnished to the pot, affording a fine head of bloom from at least early August right away through the autumn and winter. These plants, perhaps, afford the finest flowers of any description of plant; anywise they are fine for greenhouse or conservatory decoration in late summer and autumn, and in a light properly ventilated house, with a minimum temperature of 50°, flowers will be borne successively through the winter into the spring months.

For winter flowering I find cuttings struck early in April, grown on similar to those struck earlier, and transferred to the largest pots not later than mid-July, the most suitable, as they will be about 15 or 18 inches in height, and coming into flower by mid-September or its close, and then placed in a house with a temperature of about 50°, they will be at their best during the early autumn and winter months. In winter they must not be overwatered, and the air of the house must be buoyant, damp, especially when accompanied by cold, being fatal to the flowers.

I have tried placing the plants intended for winter flowering outdoors in summer, with the result that though a fine full habit was secured, the plants did not flower so satisfactorily as those that were grown from first to last under glass. The moisture of late summer I apprehend made the growth too soft, and not unfrequently the soil was soaked, and the roots were killed. Some,

however, manage the plants very well stood on and partially plunged in ashes during the summer months, housing at the close of September; therefore my lack of success with plants so treated may be due to inadaptability of location.

There are, perhaps, no finer plants for bedding than Abutilons. They may be raised for this purpose by inserting cuttings early in spring, February or March, and growing them on so as to have sturdy well-established plants in 4 or 5-inch pots, well hardened by the close of May or early June. For bedding purposes, however, it is best to strike the cuttings in gentle heat during the early part of September, repotting singly when rooted, keeping them in a house from which frost is excluded and rather dry during the winter. They may be left in the store pots over the winter, repotting in spring, but the single pot system of wintering is a long way ahead of the poverty huddling system. Transfer to 5-inch pots in spring, and if the plants have become tall cut them back to about 4 inches from the soil. This should be done and the plants allowed to start again before they are potted. Encourage growth by liberal treatment, hardening them well before planting out.

Outdoors give them a sheltered situation, as their flowers are liable to be damaged by strong winds. They look best on a gentle elevation, yet are highly effective when viewed on a level or even from a height. They require a bed of good rich light soil, deeply stirred, to grow in, and made moderately firm so as to induce flowers as well as foliage, and plant them about a foot, and not more than 18 inches, apart. The edging can be of the dwarf *A. vexillarium variegatum* (igneum), kept in order by pinching. It is better to raise a fresh stock of plants annually than to lift and store the old ones.

Hybridisation has rendered the species almost obsolete. Abutilon Darwini, the parent of a great many garden hybrids, has a fine cupped form, orange with darker veinings. *A. Darwini* superbum is a fine form of the species. It is useful as a pillar plant, being of good habit. *A. insigne* has large purplish crimson flowers with dark venation, borne in axillary drooping racemes, and reflexed. *A. striatum*, orange yellow with a thick veining of deep red, is a free grower and makes a good greenhouse plant, being a continuous bloomer, requiring to be freely pinched. *A. megapotamicum*, bell shaped flowers, peculiarly beautiful, sepals dark red, petals pale yellow, stamens dark brown. Both flowers and foliage are small, it has a graceful drooping habit. *A. venosum*, flowers orange with red veins, large, bell shaped, foliage large palmate; this is a splendid species and suitable for pillars and roofs. *A. Thompsoni*, flowers yellow or orange striated, foliage small, Vine-like, mottled with yellow and dark green. It is a neat variegated plant of moderate height—namely, 3 or 4 feet, but is best in dwarf plants.

Of varieties which excel the species for decorative purposes, the following are good.

White-flowered.—Boule de Neige, pure white, the best, and fine for pillars and roofs. Seraph, dwarf habit, and very free flowering. Purity is also free and of good sturdy habit.

Yellow-flowered.—Lemoinei, pale yellow; and Canary Bird, primrose, are fine and suitable for pillar and roof work. Miss Laura Powell is dwarf and free, perhaps the best. Queen of the Yellows has also great substance of flower, lemon, flowers large. Chrysostephanum has bold foliage, bright yellow flowers, the stamens extending conspicuously beyond the corolla. Golden Fleece is a rich yellow, also Golden Gem, free and of dwarf habit; Cloth of Gold having the deepest yellow flowers and most substance.

Orange-flowered.—Prince of Orange, being a strong grower, is the best for pillars and roof work. Striatum splendidum, orange striped crimson; and Eclipse, orange with crimson and purple veins, is good in habit and floriferousness.

Pink or Rose.—Princess Marie, rosy lake; and rosæflorum, salmon rose veined with crimson, are suitable for pillars and roofs. King of the Roses, deep rose, dwarf and free. Admiration, light pink. Future Fame, deep rose, shaded crimson. Anna Crozy, pink, shaped lilac, veined white, very showy and dwarf.

Red or Crimson.—Lustrous, red crimson, very free and dwarf. Brilliant, red, free, and dwarf. Vivid Compactum, compact habit, flowers large, scarlet. Mr. Irving, deep scarlet, shaded crimson, very pleasing. Emperor, claret crimson, large flower, free and good.

Purple.—Purpureum, deep purple, shaded lake. The Premier, rosy purple, large and free. All the varieties described as dwarf are good for bedding, and of the variegated varieties *A. Darwini* tessellatum, leaves mottled with yellow; *A. vexillarium variegatum*, leaves prettily blotched yellow, the growth being close yet good, leaves small; and *A. Thompsoni* are useful for that purpose. *A. Sellowianum marmoratum*, with its large Maple-like leaves heavily blotched with bright yellow, is the most effective of all the

variegated forms, the tops of which struck and grown on in a rather warm and moist house is one of the very finest of plants for table decoration. It does not grow at all freely in a greenhouse, the atmosphere being probably too dry and variable; it requires a moist genial atmosphere and a light position.

There are many other varieties besides those named, some of the newer forms being very bright and rich in colour, with a dwarf and free floriferous habit. What we want, however, is more of the *A. venosum* type—larger blooms on sturdy compact growing plants. Plants are readily raised from seeds sown in pans filled with light soil, just covering the seeds. Keep the soil uniformly moist, placing the pans in a house with a temperature of 65° to 75°, and when the seedlings appear pot singly as soon as large enough to handle, returning them to heat for a short time, and then removing them to a greenhouse and growing on. Except for the origination of new varieties, increase by seed is not desirable.

Omission ought not to be made of the double variety of *A. Thompsoni*. It is an exact counterpart of the species, but the flowers are double, rich orange veined with crimson. It certainly is novel, and for cutting useful. Last spring I made myself sure of a double *Boule de Neige*, as I had cuttings that all threw hen and chickens—i.e., several smaller flowers arranged around the central one, the stamens being transformed into narrow petals. As the plants advance they threw off the monstrosity and became normal.—G. ABBEY.

QUESTIONS AND ANSWERS.

At the July meeting of the Sheffield Floral and Horticultural Society questions on various subjects were proposed and discussed by the members, which proved very interesting. Mr. James Simmonds presided. The first question brought forward was,

IS IT NECESSARY TO SYRINGE VINES?

The Chairman said that for over twenty years he had been in the habit of syringing Vines up to the time of coming into bloom, after which he discontinued it for the season, and he found it answer well.

Mr. E. D. Smith considered that in the case of Vines growing in a moderate-sized greenhouse over a mixed collection of plants it was not necessary to syringe Vines, provided the plants underneath were properly attended to, because enough moisture would be present in the atmosphere for the support of the Vines and the prevention of insect attacks.

Mr. Tranter said that in a house started in January it would be necessary to syringe Vines after the bloom had set in order to keep down red spider, and he thought it was possible to syringe the Vines with pure clear water, and the Grapes too, without the slightest injury if maintaining a strong temperature.

Mr. Simmonds said he started his house regularly in January, and he had no red spider on his Vines.

Mr. W. Collier said that opinions differed very much in regard to syringing Vines, but he thought there would be found to be as many in favour of the practice as against it. There were different kinds of houses which often required different treatment. Some would require more moisture and others less. Considering the question all round, he thought a more healthy growth was secured by syringing. Most gardeners are required to grow plants as well as Grapes in a vinery. Where it is possible to devote a house entirely to Grapes syringing might be dispensed with. Then, again, there was a difference in Vine borders. Some were outside, others were inside. Where they are outside you can more readily dispense with syringing. If rain water can be procured he was in favour of syringing Vines where plants had to be grown in a vinery, especially such plants as Azaleas, which are very subject to thrips, or where it is necessary to force Strawberries in a vinery, red spider is sure to appear. Strawberry plants are the worst to introduce into a vinery, and he was supported in this statement by Mr. Woodward, who stated the experience of a gardener who had introduced Strawberries into his vinery, and at the present time they looked as if all the leaves were scorched.

WHAT ARE THE BEST FERNS TO STAND IN A SUNNY WINDOW?

In answer to this question Mr. John Eadon stated that the best British Fern to stand in a sunny or any other window, provided it is kept free from dirt and properly watered, is the *Polystichum angulare* var. *proliferum*. It would stand sun better than any other British Fern if it can have plenty of water, and it is perfectly hardy. The *Scolopendrium* treated in the same manner will stand almost any amount of sun, and look well. The *Osmunda* is a large-growing plant, and it will stand sun well; but it must also have a large amount of water. Among exotic Ferns there is

nothing to equal *Pteris serrulata*. It was the best possible Fern to place in a window. He also advised growers of plants in windows, especially Ferns, to let them shape themselves to the window, and never to turn them round. This practice was sure to spoil their appearance. If Ferns are turned round and the fronds are not properly set they will grow one-sided and deformed, and if they are properly set they will not be altered at all by turning round. By keeping plants in one position they perhaps do not look so well from a room, but they have a better appearance from outside.

WHAT CONSTITUTES A BLOOM?

This question was answered in the following notes by Mr. Smith:—In order to show clearly what constitutes a bloom it is necessary to give a short outline of the different kinds of inflorescence. The inflorescence is the whole of the flowers which are arranged directly or indirectly upon one main flower stalk or primary axis. One of the most common forms of inflorescence is the umbel, of which there are both simple and compound forms. In the simple form the individual flowers are arranged on little pedicels or flower stalks, which all spring direct from one point at the apex of the primary axis, and give off but one flower. What we generally call trusses of bloom are perhaps more correctly called umbels of bloom. In the compound form the pedicels or little flower stalks are arranged in a similar manner, but instead of only producing each a single flower they produce a number of secondary pedicels, each of which produces a flower, and the whole of them a miniature umbel, consequently the whole inflorescence is formed of a number of these small complete umbels, constituting a compound umbel of bloom. Another common form of inflorescence is the capitulum or head, in which a great number of sessile flowers, or flowers which have no visible stalk, are collected close together upon what is known as the torus or thickened head of the main flowering stalk or peduncle. Another form is the corymb, which is similar to an umbel, but differs from it in having its pedicels springing from different levels, though the flowers themselves reach about the same height. The spike is another very common form, of which there are both simple and compound. In the simple form the flowers are set upon the peduncle or main stalk without any pedicels at all, being what is known as sessile, or sitting upon the stalk. In the compound form the flowers are borne at the end of or along little pedicels springing from the main stalk at varying distances. The raceme is also a very familiar form, and differs from the spike in having the flowers on short pedicels of equal length springing from a main axis. Another form of the raceme is known as the panicle, in which each pedicel branches again, and sometimes two and three times. It is sometimes called a compound raceme.

The cyme partakes of many variations more or less of the other forms, but the character which distinguishes it particularly from the other forms is that the main flower stalk is always terminated by a flower. Sometimes the inflorescence of a plant is mixed, the whole partaking of one form, while the individual flowers or partial inflorescence will be of another character, as in the *Chrysanthemum*.

The simplest inflorescence of all is that where a single flower terminates at the end of the peduncle or main stalk, such as in the Tulip. Next to this form is that of plants such as the Pimpernel, Violets, and Pansies, which produce single flowers from the axils of the leaves. Each of these flowers, of course, constitutes a bloom of itself, and so does any individual large bloom, whether it is borne at the termination of a single peduncle or is produced on a secondary stalk branching from the peduncle and belonging to some of those previously mentioned. It is only the smaller flowers which of themselves are so inconspicuous that require to be considered, not separately as in the case of large flowers, but under certain arrangements spoken of and understood as a bloom, the particular form of arrangement, however, being indicated by the qualifying name which each special mode of arrangement bears.

WHAT ARE THE CAUSES OF WARTS ON THE LEAVES OF CERTAIN VARIETIES OF VINES?

Mr. Tranter said the presence of warts on the leaves of Vines was an old grievance, and one which often old practitioners could not get to the bottom of. He had noticed other trees affected, such as the Pear and the Currant. Some Vines appear more subject to them than others; for instance, a Muscat and a Black Hamburgh growing side by side will exhibit the spectacle of warts on the leaves of the Black Hamburgh and none on the Muscat, both Vines being subject to the same treatment.

Mr. Collier had read in one of the gardening journals that warts on the leaves of Vines were an indication of insufficient attention on the part of the grower and an insufficient supply of water at the roots. Since then he had discovered one of his own

Vines with warts on the leaves, and that it was growing in a very dry part of the border, thus confirming what he had read.—E. D. S.

SELECT CARNATIONS AND PICOTEES.

THE interesting series of papers on the Carnation by Mr. David Cooper has been mentioned to me by many, and the list of varieties mentioned on page 423 last volume much criticised, inasmuch as so many of the newer varieties that have been in all the prize stands the last two seasons are not mentioned. I may say that although I have been a very enthusiastic Carnation grower, studying to get all the newest and most frequent prizewinners, many given in the list I have not even seen or heard of. I should suggest that any who wish to have the best must certainly add the under-mentioned to their collections. I am also surprised that no list of Picotees was given. For the benefit of any who may want a collection I would recommend the list given below.

Fancy yellow ground Carnations and Picotees are now so wonderfully popular they deserve mention, and I would certainly recommend all to grow a few of the following. There are a few other new and charming varieties in the hands of Mr. Turner of Slough, but they are not yet in commerce.—ROBT. SYDENHAM.

CARNATIONS.

Scarlet Flakes.—Alisemond (Douglas), Sportsman (Hedderley), Matador (Abercrombie).

Scarlet Bizarres.—Admiral Curzon (Easom), Robert Houlgrave (Barlow), J. Crossland (Simonite).

Rose Flakes.—Sybil (Holmes), Crista-galli (Whittaker).

Crimson Bizarres.—J. D. Hextall (Simonite), Joseph Lakin (Dodwell), Master Fred (Hewitt).

Purple Flakes.—James Douglas (Simonite), Prince George of Wales, George Melville (Dodwell).

Pink and Purple Bizarres.—William Skirving (Gorton), Sarah Payne (Ward), John Harrison (Hewitt).

PICOTEES.

Heavy Red Edge.—Brunette (Kirtland), John Smith (Bower), Dr. Epps (Smith), Princess of Wales (Fellowes), J. B. Bryant (Ingram).

Light Red Edge.—Violet Douglas (Simonite), Mrs. Gorton (Simonite), Thomas William (Flowdy), Mrs. Bower (Bower).

Heavy Purple Edge.—Hilda (Douglas), Baroness B. Coutts (Payne), Muriel (Hewitt), Mrs. Chancellor (Turner).

Light Purple Edge.—Mary (Simonite), Her Majesty (Addis), Clara Penson (Wilmer), Ann Lord (Lord), Silvia (Douglas).

Heavy Rose Edge.—Edith Dombain (Turner), Lady Louisa (Abercrombie).

Heavy Red Edge.—Mrs. Payne (Fellowes), Royal Visit (Abercrombie), Lady Holmesdale (Schofield).

Light Rose Edge.—Ethel (Fellowes), Miss Gorton (Dodwell), Mrs. Rickardo (Fellowes), Nellie (Rudd), Mary (Douglas).

Heavy Scarlet Edge.—Constance Heron (Fellowes), Mrs. Rudd (Rudd), Mrs. Sharpe (Sharp).

Light Scarlet Edge.—Favourite (Liddington), Mrs. Geggie (Geggie).

Fancy Yellow Grounds.—Agnes Chambers (Douglas), Prince of Orange (Perkins), Annie Douglas (Douglas), Ada (Wallington), Almira (Douglas), Dorothy (Douglas), Terra Cotta (Douglas), Colonial Beauty (Douglas), Dodwell's Seedling 192 (Dodwell), Dodwell's Seedling 183 (Dodwell), Alfred Grey (Gyles Kilmurray), Queen of Hearts (Gyles Kilmurray), Tournament (Gyles Kilmurray), Fullbarrow Beauty (Rawson), Lemon Drop (Rawson), Dodwell's Seedling 154 (Dodwell), Dodwell's Seedling 167 (Dodwell), Theodore (Benary), Stadrath Bail (Benary).

Sells.—Emma Lakin (Lakin), Mrs. Muir (Muir), The Governor (Cross), Budge (Dodwell), Glalis (Dodwell), Tom Pinch (Dodwell), Mauve Perfection (Dodwell), Cassandra (Dodwell), Mrs. V. Harcourt (Dodwell), Mrs. Logan (Dodwell), Will Trelfall (Trelfall), Dodwell's Seedling 197 (Dodwell), Germania (Benary), Mrs. R. Hole (Dickson).

ROYAL HORTICULTURAL SOCIETY.

JULY 22ND.

THE combined attractions of the National Carnation and Picotee Society's Show, the Fern Exhibition, and the various exhibits before the Fruit, Floral, and Orchid Committees furnished a most interesting display at Chiswick on Tuesday last. Two large tents were filled with plants and flowers. The Carnations were not quite so numerous as usual, but the Ferns were in strong force; in fact, it was one of the largest and most varied Exhibitions of Ferns we have seen.

THE COMMITTEES.

FLORAL COMMITTEE. — From the Royal Gardens, Kew, came a collection of interesting plants, comprising *Æschynanthus speciosus*

with orange red flowers; *Solanum Seaforthianum*, having loose drooping panicles of bright mauve flowers; *Pavetta Caffra*, having small white flowers in dense clusters; the pale yellow *Hedychium flavescens*; the soft bright pink *Mesembryanthemum falciforme* was very attractive; the graceful *Sollya linearis* was noticeable; and bright orange-red flowers of *Mutisia decurrens* were much admired. Messrs. J. Veitch & Sons, Chelsea, had a box of hybrid *Rhododendrons* in many good varieties (vote of thanks). Mr. R. Dean, Ealing, sent several good seedling *Pentstemons* and border *Carnations*, for which awards of merit were granted. The Rev. W. Wilks, Shirley Vicarage, Croydon, sent plants of a small *Asplenium*, named *A. Petræhæ*, with diminutive fronds. Mr. T. Bones, Tower House, Chiswick, showed several seedling *Carnations* with bright red flowers; and Mr. H. Headland, The Firs, High Street, Leyton, had a seedling *Carnation* named Mrs. Headland, pale yellow edged with red. Messrs. H. Cannell & Sons, Swanley, sent a stand of extremely handsome double *Tuberous Begonias* (vote of thanks), also a fine *Gloxinia* named Mrs. Stanley, white dotted with rose. Messrs. de Rothschild, Gunnersbury Park, Acton (gardener, Mr. Reynolds), had an extensive and beautiful group of *Carnations*, *Ferns*, and *Palms* edged with *Panicum*. Messrs. Paul & Son, Cheshunt, showed three boxes of hardy flowers in many varieties. Eleven boxes of fine *Rose* blooms were also shown from Cheshunt, wonderfully fresh and good for the season.

ORCHID COMMITTEE.—Messrs. B. S. Williams & Son, Upper Holloway, sent a new *Orchid*, with tall stems, narrow leaves, and a long spike of a few small white pink dotted flowers. It was somewhat suggestive of a *Vanda*. Messrs. Sander & Co., St. Albans, showed several *Orchids*, for two of which awards of merit were granted. A grand plant of *Cattleya Schofieldiana* was included, sepals and petals green spotted crimson, the lip crimson dotted on white. Messrs. Pitcher and Manda, Swanley, sent *Cypripedium Hyeatum*, which was certificated April 26th, 1886, and a peculiar little *Dendrobium*, after the style of *O. crystallinum*.

FRUIT COMMITTEE.—Mr. R. Nicholas, The Gardens, Castle Hill South Molton, sent three grand *Queen Pine Apples*, weighing 21 lbs. The fruits were deep, well proportioned, and finely ripened (silver medal). Mr. Leach, Aibury Park, Guildford, sent large fruits of *Raspberry Hornet*, deep red finely formed samples of good flavour.

Messrs. Sharpe & Co. offered prizes for six varieties and three varieties of *Peas*. Major Heneage, Compton Bassett, and Mr. J. Watkins, Guildford, were the only exhibitors, both showing fine samples, and a first prize was awarded to each. Mr. Gibson, Thornby, Wigton, Cumberland, showed some wonderfully good *Black Currants*, the fruits unusually large. (Cultural commendation.)

Melon Barkham's Seedling (Major Heneage, Compton Bassett Gardens, Calne).—A fine globular *Melon* with scarlet flesh, deep, of good flavour, the skin finely netted. (First class certificate.)

PLANTS CERTIFICATED.

Masdevallia Rolfeana (F. Sander & Co.).—A new species with small flowers of a peculiar dark red, almost a chocolate tint. The points of the sepals yellow and recurving. (Award of merit.)

Grammatophyllum multiflorum (F. Sander & Co.).—Plant strong with stout pseudo-bulbs, and broad vigorous leaves. The raceme is over 2 feet long, with neat flowers, pale green with light brown blotches on the ovate, equal sized sepals and petals; the lip small, faintly veined with brown or white. (Award of merit.)

Masdevallia elephanticeps (J. Veitch & Sons).—A peculiar large flowered species, the sepals deep yellow outside, with dark crimson on the inner surface. (Botanical certificate.)

Oncidium rhysorrhapis (Sir Trevor Lawrence, Bart., M.P.).—A charming *Orchid* with drooping panicles of abundant small bright yellow flowers, the sepals palish streaked with red, the lip rounded and pure yellow.

Epidendrum species (Sir Trevor Lawrence).—A distinct and beautiful *Epidendrum*, the sepals pale blush, the petals white acute, the lip three-lobed white, the lateral lobes are rounded, the central one narrow and acute.

Begonia H. M. Stanley (H. Cannell & Sons).—A grand double tuberous variety of a peculiarly glowing crimson scarlet, the flowers of great size and fine shape. (Award of merit.)

Begonia Lafayette (H. Cannell & Sons).—A double tuberous variety, medium size, bright scarlet, and extremely free. (Award of merit.)

Carnation Rowena (R. Dean).—A border variety, bright soft pink, with notched petals, very fragrant. (Award of merit.)

Carnation Rosalind (R. Dean).—A border variety, with good flowers, dotted with deep crimson on a light ground. (Award of merit.)

Carnation Rebecca (R. Dean).—A border variety of an extremely rich scarlet colour, very bright and free. (Award of merit.)

Clematis recta flore-pleno (Paul & Son).—Flowers double, white, star like, produced in dense clusters.

THE FERN.

One large tent nearly 200 feet long with stages on each side was not sufficiently large to hold the Ferns sent in response to the invitation of the Council. Two large groups had to be accommodated in the Carnation tent, and this speaks volumes for the interest taken in the scheme. Ferns have been somewhat neglected of late years, with the exception of a few that are valued for decorative purposes, and something in the character of a large exhibition was needed to call public attention to these graceful plants again. Certainly none who visited Chiswick on

Tuesday and Wednesday but would fail to be struck with the astonishing diversity of foliage form which Ferns present. A large proportion of those shown were, too, such as could be grown with little trouble by almost every amateur. A few Ferns test the skill of experienced cultivators, but the majority are easily managed, extremely beautiful, and very useful for most ornamental purposes.

The schedule issued by the Council was as follows, exhibitors being invited to arrange their plants in these groups for convenience of examination and comparison:—British Ferns.—1, *Adiantum Capillus-Veneris* (Maidenhair) and varieties; 2, *Aspleniums* (Spleenworts) and varieties; 3, *Athyrium Filix-fœmina* (Lady Fern) and varieties; 4, *Lastrea Filix-mas* (the Male Fern) and varieties; 5, *Polypodium vulgare* and varieties; 6, *Polystichum aculeatum* and *angulare* (the Shield Fern) and varieties; 7, *Scolopendrium vulgare* (the Hart's Tongue) and varieties; 8, *Blechnum Spicant* (the Hard Fern) and varieties; 9, *Hymenophyllum* and *Trichomanes radicans* (Filmy Ferns, Tunbridge Fern, Killarney Fern) and varieties; 10, Other British Ferns, *Allosorus*, *Ceterach*, *Cystopteris*, *Osmunda*, *Lastrea* (except *Filix-mas*), *Polypodium* (except *vulgare*), *Pteris*, &c. Hardy foreign Ferns and varieties. Stove and Greenhouse Ferns.—1, *Adiantum cuneatum* and varieties; 2, other *Adiantums*; 3, *Aspleniums*, *Athyriums*, *Diplaziums*; 4, *Blechnums*, *Lomarias*, *Doodias*, *Woodwardias*; 5, *Cheilanthes*, *Nothochlœnas*; 6, *Davallias*, *Microlepias*; 7, *Gymnogrammas*; 8, *Gleichenias*; 9, *Lasteas*, *Polystichums*, *Aspidiums*, *Cyrtomiums*, *Nephrodiums*; 10, *Pteris*, *Pellæas*, *Onychium*; 11, *Polypodiums*, *Drynariads*, *Pleopeltis*, *Niphobolus*; 12, *Hymenophyllums* and *Trichomanes* (Filmy Ferns); 13, other stove greenhouse Ferns. *Selaginellas* and *Lycopodiums*. Ferns best adapted for cultivation in rooms. Ferns best adapted for hanging baskets.

Though the exhibitors were few in numbers, these contributed so largely and such choice collections that the total display was highly satisfactory. It would be impossible this week to enumerate all that were shown, and a selection would be difficult; we therefore confine our report to brief general notes on the chief collections, fuller details of the plants represented being reserved for another issue. Two illustrations are given, however, in figs. 10 and 11, *Adiantum Eusei* (page 67), and *Davallia foeniculacea*, which was certificated some time since when shown by Messrs. B. S. Williams and Son (page 73); both are very distinct Ferns, to which we have previously referred in these pages.

Messrs. J. Veitch & Sons, Chelsea, contributed an exceedingly fine and varied collection of Ferns, comprising representatives of all the principal genera. The list of all the species and varieties included would be an extremely long one, but it may be noted that the following were the numbers.—Total about 300 species and varieties in sixty genera, the most largely shown being *Adiantums* seventy. One of the most interesting portions of the collection was that devoted to hybrid, or supposed hybrid, Ferns (125), which alone furnished ample material for study. There were also a group of *Todeas*, which included many seedlings. Of curious and interesting Ferns one hundred were staged, and of exotized crested Ferns forty forms were sent.

Mr. C. T. Drury, Fernholme, Forest Gate, E., contributed a group of beautiful hardy Ferns, nearly all forms of the British species many having been collected or raised by himself. Exceedingly beautiful were the plumose varieties of the Lady Fern, and the crispate forms of the Hart's Tongue.

Mr. H. B. May, Upper Edmonton, had a most extensive group of Ferns in all the sections, over 300 species and varieties being represented by well-grown plants, such as we are accustomed to seeing from that nursery.

A considerable portion of the tent was occupied with the grand collection of Ferns from Messrs. W. & J. Birkenhead, Sale, near Manchester, who had about 600 varieties, comprising all the best Ferns in cultivation, hardy and exotic sorts being admirably shown.

From Mr. E. J. Lowe, F.R.S., Shirenewton Hall, Chepstow, and the Zoological Gardens, Clifton, came an extraordinary collection of hardy Ferns, comprising some wonderful varieties of *Scolopendriums*, *vulgare crispum*, *Aspidiums*, *Athyriums*, *Nephrodiums*, and other Ferns.

Mr. J. A. Whitford, Rydal Mount, Streatham Hill, S.W. (gardener, Mr. H. Wright), had a choice collection of well-grown Ferns, some of the most notable plants being fine examples of *Platycerium grande*, *Gymnogramma schizophylla gloriosa*, *G. A'stoni*, *Davallia Mooreana*, *D. fijiensis plumosa*, *Adiantum farleyense*, with many other *Adiantums* and miscellaneous Ferns.

Mr. W. B. Latham, Curator Botanic Gardens, Birmingham, sent a plant of a hybrid *Dicksonia*, said to be between *D. arborescens* and *D. antarctica*, and it was named *D. Lathamii*. The fronds are stout, strong, slightly arching, very graceful, bipinnate, the pinnules bluntly notched. Fronds of a hybrid between *Alsophila excelsa* and *Cyathea princeps* were also shown by Mr. Latham.

THE CONFERENCES.

Conferences were held on both days, that on Tuesday being devoted to Carnations, and the programme was as follows. The proceedings commenced at 2.30 P.M. Martin R. Smith, Esq., President of the Conference, in the chair. The papers were:—"The Carnation from a Botanical Point of View," by Mr. F. N. Williams, F.L.S.; "The Florists' Carnations and Picotees as Exhibition Flowers," by Mr. Harry Turner; "Carnations and Picotees in Towns," by Mr. Martin Rowan; "Border Carnations," by Mr. Richard Dean. On Wednesday Ferns furnished the subjects for consideration, the programme being as follows. Mr. J. G. Baker, F.R.S., President of the Conference, in the chair. Papers on "The Systematic Relations of Ferns," by Professor Bower, F.L.S.; "The Cultivation of Exotic Ferns," by Mr. W. H. Gower;

Hybrid Ferns," by Mr. E. J. Lowe, F.R.S.; "Plumose British Ferns," by Mr. C. T. Drury, F.L.S.; "Hardy Ferns and Their Cultivation," by Mr. J. Birkenhead.

NATIONAL CARNATION AND PICOTEE SOCIETY.

SOUTHERN SECTION.—JULY 22ND.

A FIRST-RATE Show, or even one of average excellence, was not looked forward to by the most sanguine Carnation lover this year. The climatic vagaries with which Rose exhibitors have had to contend have also perplexed cultivators of Carnations and Picotees, and experience taught them that the more modest their anticipations of this season's Show the less would be the likelihood of disappointment. Dull, wet, stormy weather, with brief alternations of brilliant sunshine, is the reverse of favourable for showing flowers true and clear in colour; nevertheless, as regards quality the Show was better than had been expected, especially with respect to Carnations, which were a really excellent display. Picotees were not quite so good, many of the flowers being a little spotted. The competition was not so brisk as usual, and the absence of one or two exhibitors who have shown well in former years was noted with regret. There were no special features of the Show calling for further comment other than is made in the subjoined notes of the awards.

CARNATIONS.

A first and pleasing duty last year was to note the increased amount of competition in the various classes. This was not fully sustained on the present occasion, but every allowance must be made for it, and it is to be hoped that another year more favourable circumstances may lead to an increased number of entries. In the principal class, that for twenty-four blooms, not less than twelve distinct varieties, two old opponents in Messrs. Douglas, gardener to Mrs. Whitbourn, Great Gearies, Ilford, and C. Turner, Royal Nurseries, Slough, with that well-known suburban amateur, Mr. M. Rowan, 36, Manor Street, Clapham, London, S.W., provided the whole of the competition, and the prizes were awarded in the order in which the names are placed. Mr. Douglas had a capital stand, comprising the following varieties:—Back row: Arthur Madhurst, Matador, Joseph Crossland, and five seedlings. Middle row: Matador, very fine; Harrison Weir, Squire Whitbourn, Alisemond, a capital bloom; Thalia, Rosamond, and two seedlings. Front row: Robt. Houlgrave, excellent; Thalia, E. Adams, John Keet (2), Alisemond, Harmony, and a seedling; the first example of John Keet being a very fine example. Mr. Turner had good flowers of Miss Erskine Wemyss, H. K. Mayor, Wm. Skirving, Hutchinson's Rose, and Squire Llewellyn. Mr. Rowan had Jas. Douglas, Thalia, Sporting Lass, John Baxton, Sarah Payne, George Melville, and Florence Nightingale in first-rate form, and altogether had a very neat, well-finished stand. There were six stands of twelve, the majority of considerable merit. Mr. Rowan's first prize box was a very beautiful one, the blooms being large, in good colour and very smooth. The varieties were Thalia, a splendid flower; Alfred, J. D. Hextall, Master Fred, Jas. Douglas, very fine; Sarah Payne, George Melville, excellent; Admiral Curzon, Edward Rowan, Gordon Lewis, Sportsman and John Buxton. Mr. Douglas' second prize stand was mainly composed of seedlings, fresh and bright, Mr. C. Phillips, 18, Hamilton Road, Reading, being third; Mr. Headland, The Firs, High Street, Leyton, fourth; Mr. G. Chaundy, William Street, Oxford, fifth; and Mr. W. J. Nicholls, 274, Kingsland Road, London, N.E., sixth. There were eleven stands of six blooms, and Mr. J. Lakin, Temple Cowley, Oxford, was placed first for James Douglas, Duchess of Fife, Squire Llewellyn, Matador, J. D. Hextall and Lovely Mary, a beautiful stand of smooth, well finished flowers. Mr. T. Anstiss, Brill, was placed second for Wm. Bacon, Mr. May, James Douglas, Robert Cannell, Robt. Houlgrave and one of Dodwell's seedlings, the latter a handsome purple flake. The third prize was taken by Mr. J. J. Keen, 15, Castle Street, Southampton, the fourth by Mr. F. Nutt, 1, Gloucester Villas, Southampton, the fifth by Mr. A. J. Sanders, gardener to the Viscountess Chewton, Bookham Lodge, Cobham, and the sixth by Mr. W. L. Walker, Dunollie, Palmerston Road, Reading.

Single specimens were numerous, and comprised some excellent blooms. In the scarlet b'zarrés, Mr. Douglas was first and second with Robt. Houlgrave. Mr. Headland third and fourth with Joseph Crossland, and Mr. Phillips fifth with George. In the crimson b'zarrés, Mr. Douglas was first and third with seedlings, Mr. Phillips second with J. Harland, Mr. Robt. Sydenham fourth with Harrison Weir, and Mr. Headland fifth with Duc d'Aumale. In the pink b'zarrés, Mr. A. J. Sanders was first with Wm. Skirving, Mr. Douglas second and third with seedlings, Mr. Lakin fourth with Sarah Payne, and Mr. Rowan fifth with the same variety. In the purple flakes, Mr. Rowan was first with Jas. Douglas, Mr. Douglas second with a seedling, Mr. Sanders third with Jas. Douglas, Mr. Lakin fourth with Mayor of Nottingham, and Mr. Phillips fifth with Jas. Douglas. In the scarlet flakes, Mr. Douglas was first with Alisemond, Mr. Lakin second with Sportsman, Mr. Phillips third and fifth with Sportsman, and Mr. Headland fourth with Henry Cannell. In the rose flakes, Mr. Lakin was first with Lovely Mary, Mr. Douglas second with a seedling, Mr. Turner third with Thalia, Mr. Rowan fourth, and Mr. Turner fifth with the same variety.

The premier Carnation in the Show was Robert Houlgrave in Mr. Douglas's first prize stand of twenty-four.

PICOTEEES.

As before stated, these were a little lacking in fixity of colour, and also perhaps in general smoothness, but the latter weakness was less

noticeable than the first. Mr. C. Turner won with twenty-four blooms, not less than twelve distinct varieties, having the following:—Back row: Two beautiful blooms of Lucy, two charming specimens of Madeline, and four seedlings. Middle row: Rival Purple, Nymph, Miss Flowdy, Worfred Beauty, and four seedlings. Front row: Lady Holmesdale, a capital example of Princess Dagmar; Louisa (2), John Smith, Lord Valentia, Mrs. Gorton, and a seedling. These formed an admirable stand, and were a somewhat easy first. Mr. Douglas was second, his best blooms being Her Majesty, Ethel, Constance Heron, and Miss Flowdy. No other competed. With twelve varieties the last named exhibitor scored a very meritorious victory with Her Majesty, a capital flower; Constance Heron, Liddington's Favourite, a splendid bloom; Muriel Hewett, Princess of Wales, Jessie Turner, Mrs. Sharpe, Mrs. Giggie, a charming flower; Silvia Douglas, Mrs. Chancellor, Zerlina, and Brunette. This was a very beautiful stand, the flowers being smooth and finely finished. Mr. C. Phillips, 18, Hamilton Road, Reading, had small flowers, but their smoothness and freshness secured them second prize against larger flowers. Orlando, Mrs. Sharpe, Mrs. Richards, and Favourite were, though small, charming flowers. Mr. A. J. Sanders was third with large but somewhat rough blooms; Mr. Headland fourth, and Mr. W. J. Nicholls, 274, Kingsland Road, London, N.W., fifth. There were nine stands of six blooms, amongst them some capital lots. Mr. M. Rowan had an excellent stand, and scored a creditable victory with Master Norman, Favourite, Elith D'Ombra, Clara Penson, Muriel, and Brunette. The two first named were excellent flowers, the third a somewhat small but charming example, and Clara Penson was also a smooth, neat flower. Mr. G. Chaundy, William Street, Oxford, was second with Amelia, Lady Holmesdale, Favourite, Clara Penson, Mrs. Lord, and a seedling, also a capital stand; Mr. J. Lakin, third; Mr. Rebbeck, fourth; Mr. J. J. Keen, fifth; and Mr. F. Nutt, sixth. Yellow grounds, in twelves, were shown by three growers, Mr. Turner winning with a beautiful stand of fresh, smooth, and well-formed flowers, the varieties being Annie Douglas (2), Janira (2), Dorothy, Almira (2), Agnes Chambers (2), and three seedlings. Mr. Douglas was second, some points behind, his best flowers being Mrs. Whitbourn and Agnes Chambers. Close up, third, came Mr. Hooper, Vine Nursery, Widcombe Hill, Bath, with some charmingly fresh blooms. There were four stands of six. Mr. G. Hooper, 7, Cambridge Place, Bath, won with a splendid stand, comprising Mrs. Little, Star of Bath, Agnes Chambers, Sparkler, Alice Brookes, and Duchess of Albany. Mr. Chaundy also had a capital stand, comprised of Alfred Grey, Nancy, Tournament, Dodwell's 167 and 192, and a seedling. Mr. F. Nutt was third.

The awards for the single specimens were as follows:—Red, heavy edge: Mr. Lakin was first with Isabel Lakin, Mr. Sanders second with Brunette, Mr. Headland third with J. B. Bryant, Mr. Douglas fourth with Princess of Wales, and fifth with Brunette. Red, light edge: Mr. Douglas was first and second with Violet Douglas, Mr. Sydenham third with Emily. Purple, heavy edge: Mr. Douglas was first and third with Mrs. Chancellor, Mr. Phillips second and fourth with Muriel, and Mr. Sanders fifth with Zerlina. Purple, light edge: Mr. Rowan was first with Clara Penson, Mr. Headland second with Pride of Leyton, Mr. Douglas third with Her Majesty and fourth with Silvia, Mr. Nicholls fifth with Pride of Leyton. Rose, heavy edge: Mr. Turner was first with Madeline, Mr. Douglas second with Mrs. Payne and third with Constance Heron, Mr. Phillips fourth with Mrs. Ricardo, and Mr. Nicholls fifth with Mrs. Sharpe. Rose, light edge: Mr. Douglas was first and second with Liddington's Favourite, Mr. Headland third with Favourite, Mr. Sydenham fourth with Mrs. Giggie. Yellow grounds: Mr. Douglas first and third with seedlings, Mr. Turner second with Agnes Chambers, Mr. Headland fourth and fifth with seedlings.

The premier Picotee was Liddington's Favourite in Mr. Douglas' stand of twelve blooms.

MISCELLANEOUS SELFS AND FANCIES.—These were a very bright display, pleasing to the general public unversed in the niceties of bizarres, flakes, heavy edge, and light edge. There were no less than five stands of twenty-four blooms, Mr. C. Turner winning with a delightful collection of flowers, the varieties being Mary Morris (2), Anna Benary (2), Germania (2), Rose Celestial (2), Mrs. Reynolds Hole (2), Colonial Beauty, Victory (2), Duchess of Connaught, Purple Emperor, Sunset, Ruby, Terra Cotta, Lady Rose Molyneux, and several seedlings. Mr. Douglas was second with a stand largely composed of seedlings; Mr. W. Toby, 3, St. Mark's Grove, West Brompton, London, S.W., third; Mr. Hooper, Vine Nursery, Bath, fourth; and Mr. G. Hooper, Cambridge Place, Bath, fifth. There were ten stands of twelve, Mr. G. Chaundy winning with The Major, Nancy, Queen of the West, Mrs. Champness, Mrs. Reynolds Hole, Beauty (seedling), Dodwell's 476, and five other seedlings. Mr. Phillips was second, Mr. Rowan third, Mr. Anstiss fourth, Mr. Lakin fifth, and Mr. A. J. Sanders, sixth.

Specimens in pots were best shown by Mr. Turner, who won with Hutchinson's Rose, Juliette, Louisa, Sunset, Mrs. Reynolds Hole, Agnes Chambers, Victory, Almira, Purple Emperor, Favourite, and a seedling. Mr. Douglas was second, and Mr. Headland third.

First-class certificates were awarded to Mr. Douglas for Nellie Hibberd; to Mr. Turner for Sunset and Victory, all yellow grounds. First and second prizes for seedlings were also awarded to Nellie Hibberd. A first-class certificate was awarded to Mr. S. Barlow, Stakehill House, Manchester, for Pink Jas. Thurston.

An extensive collection of Carnations cut from the open ground was staged by Messrs. J. Veitch & Sons, Royal Exotic Nursery, King's Road, Chelsea, London, S.W., these forming a beautiful display. Mr. T. S.

Ware had several stands of Carnations and Pinks from the open borders, a free and bright collection; and Messrs. Paul & Son, The Old Nurseries, Cheshunt, also had several stands in their collection of herbaceous plants.

HORTICULTURAL SHOWS.

PORTSMOUTH.—JULY 15TH.

THE Committee of this enterprising Society may be once more congratulated upon their efforts in providing so good an Exhibition for their patrons and the flower-loving public of this busy town as they did on the date named. An excellent Show was the result of a well arranged liberal schedule of prizes. The hard-working and courteous Honorary Secretary, Mr. F. Power, and his able assistant, Mr. B. Miller, deserve much praise for the arrangements made for exhibitors, Judges, and visitors.

Two large tents were needed to provide space for the exhibits; the centre of each was occupied with specimen stove and greenhouse plants, Ferns, &c., which gave quite a tropical appearance to the whole. Around the sides of one tent were arranged the groups for effect, which were a special feature of the Show. Plants provided the greatest display, therefore merit a first notice in this report. The principal class was that for twelve stove or greenhouse specimens, not less than half to be flowering. Mr. J. Cypher, nurseryman, Cheltenham, succeeded in obtaining the premier award by the superiority of his flowering plants, the bulk of these being of the highest order of merit. Especially noticeable were *Ixora Pilgimi*, *Erica Parmentieriana rosea superba*, *Allamanda grandiflora*, *Ixora Fraseri*, and *Ixora salicifolia*. The best specimens of foliage were *Croton Queen Victoria*, *Kentia australis*, and *Dasylirion acrotrichum*, all in rude health. Mr. Offer, gardener to Mr. J. Warren, Handcross Park, Crawley, Sussex, was a good second, especially meritorious being the well coloured *Crotons Prince of Wales*, *Andreanus*, and *princeps*. Mr. E. Wills, gardener to Mrs. Pearce, The Firs, Bassett, Southampton, was third, having extra fine specimens of *Cycas revoluta* and *Kalosanthes coccinea*. The three collections made a grand display. For four specimens under the same conditions there was but one entry, that from Mr. C. Penford, gardener to Sir F. Fitzwygram, Bart., M.P., Leigh Park, Havant, who staged meritorious examples of *Satice profusa*, *Clerodendron Balfourianum*, *Bougainvillea glabra*, and *Anthurium crystallinum*.

For a miscellaneous collection of plants arranged for effect in a space 10 feet by 8 feet, Mr. E. Wills easily came in first with a light and tasteful arrangement of suitable plants; amongst them *Lilium longiflorum*, *Celosias*, *Orchids*, *Crotons*, and *Palms* were conspicuous, the whole neatly edged with *Panicum variegatum*. Mr. Penford was second with a rather heavy arrangement; Mr. W. Peel, gardener to Miss Todd, Sidford Lodge, Shirley, was third. Groups arranged for effect in a slightly smaller space than the above, but confined to growers in Portsea Island only, made a fine show down one side of the tent. Mr. W. Rooke, gardener to Messrs. Brickwood, Esplanade Hotel, Southsea, led the way with plants very suitable for the purpose.

The best three specimen *Palms* with stems not less than 6 feet high were staged by Mr. Offer; good examples of *Latania borbonica*, *Phoenix reclinata*, and *tenuis* of the same genus. Messrs. Penford and Wills followed with smaller plants of good health and quality. Mr. Offer easily secured leading honours for three Ferns not to exceed 5 feet in height with especially healthy examples of *Davallia polyantha*, *Cibotium Schiedeii*, and *Davallia Mooreana*. Mr. Wills was second, and Mr. Peel third, both staging well. Mr. Offer with *Cyathea dealbata* secured foremost position for one specimen Tree Fern, not less than 5 feet high, as a condition; Mr. Peel second with an exceedingly healthy plant of *Kentia Canterburyana*. Mr. Offer secured the leading position for one specimen Palm, followed by Messrs. B. & J. F. Legg, Bury Road Nurseries, Gosport, with a huge one of *Chamaerops excelsa*, Mr. Wills third with *Phoenix reclinata*. Five competed for the best specimen flowering plant, the first prize eventually falling to Mr. Cypher for *Ixora regina* with over forty trusses; Mr. Penford was second with *Cypripedium barbatum nigrum* carrying over forty blooms, and Mr. Wills third for a well-grown *Kalosanthes coccinea*. Mr. Offer had a magnificent plant of *Croton Warreni* over 7 feet in diameter, richly coloured, and was easily first for a specimen foliage plant; Mr. Penford second with *Cycas circinalis* in capital condition. The best Tuberous Begonias were exhibited by Mr. W. Sait, gardener to General Napier, Oaklands, Cosham; the best Fuchsias by Mr. J. Burridge, North End Nursery, Portsmouth; Coleuses by Mr. Hatch, gardener to the Victoria Park Committee, which in all sections were creditable examples. Mr. J. Burridge had some capitally grown Cockscombs, being dwarf, large in the comb, and especially rich in colour. Gloxinias by Mr. Hatch, and table plants by Mr. Wills, completed this section of the Show.

Cut flowers were not staged in great numbers, but of average good quality. For twelve bunches of hardy varieties Messrs. Legg and W. Sait were the prizewinners, showing the usual assortment in such a class. For twelve bunches of stove or greenhouse varieties, Mr. Penford and Mr. W. Peel divided the prizes in the order named. The Rev. W. Shirley, Southwick Vicarage, staged the best Tuberous Begonias, a good lot, in glasses. Messrs. Perkins & Son, Coventry, were distinctly ahead with both ball and bridal bouquets, with charming arrangements in their well-known style, Mr. J. Burridge following in both classes.

Fruit made an imposing display, much the largest quantity yet seen at a Portsmouth summer Exhibition, and was generally of superior quality. For six dishes, Pines excluded, Mr. Inglefield, gardener to Sir J. Kelk, Bart., Tedworth, Marlborough, was placed first with Black Hamburg and Muscat of Alexandria Grapes, Hero of Lockinge Melon,

Violette Hâtive Peaches (richly coloured), Lord Napier Nectarine, and Brown Turkey Fig, all creditable dishes. Mr. Penford was second, fine Barrington Peaches and Hero of Lockinge Melon were his chief dishes. With Madresfield Court in splendid condition, Mr. J. Tavenor, gardener to Sir A. K. Macdonald, Bart., Wolmer Lodge, Liphook, was an easy first amongst many competitors in the class for three bunches of black Grapes. Mr. N. Molyneux, gardener to J. C. Garnier, Esq., Rooksbury Park, Wickham, Fareham, followed with good bunches and berries of Black Hamburgh; Mr. W. Sait, third, also staging strongly. For the same number of bunches any white Grape, Mr. Inglefield led the way with Muscat of Alexandria of medium size, well coloured; Mr. N. Molyneux, second, with excellent Foster's Seedling; Mr. T. Hall, gardener to S. Montagu, Esq., M.P., South Stoneham House, Southampton, third, with Buckland Sweetwater. Mr. G. Dee, gardener to Mrs. Mills, Crescent Villa, Kingston, Portsmouth, secured first honour amongst growers in Portsea Island only for two bunches of black Grapes. The best scarlet flesh Melon was staged by Mr. Dimmick, gardener to Mrs. Young, The Limes, North End, Portsmouth; Mr. Penford following. The latter reversed his position for any green flesh Melon, followed by Mr. Inglefield, both showing creditably. Mr. Inglefield also had first honour for one dish of Peaches; Mr. Wilkin, gardener to Lady Theodore Guest, Inwood House, Henstridge. These two exhibitors reversed their positions in the class for one dish of Nectarines. Mr. Inglefield staged very fine President Strawberries in the class provided for one dish of this fruit; Messrs. Wilkins and Hall followed, the latter having fine fruits of Loxford Hall Seedling. Mr. Hall was first with Cherries.

Vegetables were a good display. For nine varieties in which two sorts of Potatoes were allowed there was brisk competition. Mr. Wilkins eventually secured the foremost position with a lot which combined all the essential points which go to make up a fine collection. Sutton's Magnum Bonum Cauliflower, Model Carrots, Perfection Tomatoes, Duke of Albany Peas, Sutton's Seedling Potatoes, extra fine, and Rousham Park Onion. Messrs. Inglefield, Molyneux and Sait followed in the order named, all staging well. Collections of vegetables were shown by residents of Portsea Island and amateurs also in the classes specially set apart for them, and made a good display, as also did the single classes for Tomatoes and Cucumbers in their respective classes.

At one end of the tent Mr. B. Ladhams, florist, Shirley, Southampton, staged a grand collection of hardy herbaceous cut flowers, which received the attention they deserved from the stream of visitors throughout the time the Show remained open.

WOLVERHAMPTON.

THE second annual Exhibition was held July 15th to 17th in the Public Park, which covers a very large area, and is an admirable place for a large horticultural display under canvas. The weather was bright and not too hot, and the numerous tents had an imposing effect in the pleasant surroundings of spacious open green lawns, shrubs, and flowers. The park is very extensive and admirably kept, and is most creditable to Mr. Thomas, the Superintendent.

Several spacious tents were occupied by horticultural produce; the main tent, quite 200 feet long and wide, accommodated the specimen plants entered in the various classes, and the large display of superb specimens called forth general praise. In the class for sixteen flowering and fine-foliage plants there were four exhibits. Mr. Cypher was first with grand Palms, a superb Cordyline indivisa, some excellent Crotons, a very fine Erica Parmentieriana rosea and other Ericas, a handsome Ixora Reginae, and other plants. Mr. Finch, gardener to Mr. Alderman Marriott, Coventry, was a good second, and Colonel Pepper, Salisbury, third. Mr. Cypher's first prize specimens of six stove and greenhouse plants were very fine, including grand plants of Ixora Duffii, a superb and distinct variety with large heads of rich crimson tinted flowers; a wonderful plant of Ixora salicifolia, and very fine specimens of Erica Parmentieriana rosea, Clerodendron Balfourianum, and Stephanotis floribunda. Mr. Finch was second with capital plants, including very fine Ixoras Fraseri and Williamsi and Allamanda Hendersoni. Mr. Dyer, gardener to Mrs. Marigold, Edgbaston, Birmingham, was third with some very fine specimens. Ferns, both Tree and exotic, were staged, the latter generally of medium size and well grown. Mr. Dyer taking first place for six exotics. Palms and fine-foliage plants were numerous, and so many fine specimens had a telling effect in the big tent. Mr. Cypher was first for six Tree Ferns, first for six Palms, and third for six fine-foliage plants. In the latter class Mr. Marriott was first and Mrs. Marigold second. Mr. Cypher's first prize eight Orchids consisted of large specimens of Cypripediums Curtisi, Stonei, and Lawrenceanum; Anguloa Clowesi, a large mass of Cattleya Gaskelliana, Cattleya Sanderiana, rich in colour; Lælia purpurata, and Dendrobium filiforme. Mr. Marriott had a good second prize lot, which included a fine example of Cymbidium Lowi and a good Odontoglossum Lindleyanum. Four groups were set up, the "not exceeding 400 square feet" prizes. Colonel Pepper's gardener took the first prize; Mr. Powell, gardener to G. H. Kenrick, Esq., Birmingham, second; and Mr. Fowler third. Two especially beautiful Crotons were staged; one C. Etna in Mr. Dyer's, and C. Thomsoni in Mr. Cypher's collections. In Mr. Dyer's group was a grand, massive, well coloured Croton montfordiensis.

This large tent of plants and the excellent display of cut Roses were the two great features of the Show. The cool weather brought out a large display of good sized, well-developed, and well-coloured blooms, and an excellent close competition. In the class for forty-eight blooms five lots were staged. Mr. Frank Cant, Colchester, was well ahead for first prize with beautiful even blooms of good varieties, amongst these

Ulrich Brunner, Alfred Colomb, Auguste Rigotard, Madame Henry Pereire, Madame Cusin, and Horace Vernet, Catherine Mermet, Marie Verdier, Mrs. John Laing, Madame Alphonse Lavallée, Etienne Levet, Duchesse de Morny were beautiful blooms. Second, the Cranston Nursery Company, Limited; third, Messrs. Perkins & Sons, Coventry; fourth, Messrs. Prior & Sons, Colchester. For thirty-six blooms (six exhibits), first, the Cranston Company; second, Mr. F. Cant; third, Messrs. Perkins & Sons. For twenty-four blooms (four exhibits), first, F. Cant; second, the Cranston Company; third, Messrs. Perkins & Sons. Twelve light Roses, one sort, first, Mr. F. Cant, with very beautiful bright coloured Mrs. John Laing; second, Messrs. Prior, with fine blooms of Lady Mary Fitzwilliam; third, Messrs. Perkins & Sons, with Mrs. J. Laing, pale in colour. Twelve dark Roses, one sort, first, the Cranston Company, with fine blooms of Alfred Colomb. Twelve Tea Roses, first, Cranston Company; second, Mr. F. Cant; third, Messrs. Prior & Sons. Mrs. John Laing Rose was fine generally, and Her Majesty was in good condition in some stands, Ulrich Brunner fine everywhere. Messrs. Perkins & Sons were first in the three classes for bouquets with chaste artistic arrangement; Messrs. Pope & Sons, Birmingham, second.

For twenty-four hardy herbaceous cut flowers, first, Messrs. Dicksons, Limited, Chester. The gentlemen's gardeners' county classes were well filled generally. Mrs. Marigold's gardener was first for six specimen plants and six exotic Ferns. Mr. G. H. Kenrick's gardener first for six Orchids. An excellent lot of bright well-bloomed Zonal Pelargoniums were staged, and Mr. Dyer took the first prize for a group in this section.

There was only a moderate display of fruit, and much cannot be said as to quality. For four bunches of Grapes, Mr. G. Meakin was first, and Mr. Blair, Trentham Gardens, second; also first for Peaches, with fine Royal Georges; also for Nectarines, with good Lord Napiers. For a collection of ten kinds of fruit, and for six kinds, Mr. Blair was first in both classes.

The amateur and cottagers' exhibits were extensive in their respective sections. Some excellent vegetables were staged, especially in the classes for collections, in two of which Mr. Lambert, gardener to Colonel Wingfield, Shrewsbury, took first prizes, staging in all in his usual first class style. In his collections were fine examples of Purley Park Cucumber, Sutton's Magnum Bonum, and Veitch's Autumn Giant Cauliflower, and a very fine Pea, Sutton's Mammoth Marrow.

Several honorary exhibits were staged, amongst them, from Messrs. Rd. Smith & Co., Worcester, a large group of plants, such as Lilium Harrisii, superb Gloxinias, and others, cut herbaceous blooms, and an interesting exhibit of cut shoots of rarer ornamental trees and shrubs. Messrs. Hewitt & Co., Solihull Nurseries, a group of plants, cut herbaceous plants, and very fine double and single seedling Begonias, and a handsome bridal bouquet. Messrs. Pope & Sons a large and very handsome wreath, in which a few pale tinted Cattleya blooms were mixed; and Mr. A. Brown, florist, Birmingham, a stand of florists' Pinks, in which Brown's Amy was conspicuous for its fine quality.

The Exhibition was the largest and best seen in Wolverhampton, but the genius of a Bruce Findlay was needed to govern and guide the arrangement in the tents. Whilst the judging was going on much could have been done in closing up and filling spaces, and the filling in of the prize cards was very unsatisfactory to the exhibitors, and made it difficult for visitors to see who were the prizewinners.

HIGHGATE.—JULY 17TH.

THE Highgate Horticultural Society is now in a most prosperous condition, such as would in fact compare favourably with many other societies of far greater pretensions, and this is largely due to the energetic and courteous Secretary, Mr. D. B. Crane, who undertook the Society's arrangements two or three years ago, and has effected an astonishing improvement in so brief a time. Much praise is also due to the Treasurer, Mr. Herbert Cutbush, who takes a great interest in the Society's welfare, and has assisted in extending its popularity. The result of last year's Show was a balance of £118 in favour of the Society, so that without taking a shilling at the gates the whole of the prize money could have been paid in full, as £200 was standing to the credit of the Society. This is a sound financial condition, and the receipts on Thursday thus constituted a balance for the next year.

The Show, which was held in a field attached to Northfield, was a good one, plants, flowers, fruits, and vegetables being all admirably represented, and a bright varied display was produced in the two large tents. Perhaps the most remarkable feature of the Highgate Show is, however, the cottagers' department, in which the competition is exceedingly keen, and the quality of the exhibits, particularly the vegetables, very high. The Baroness Burdett Coutts provides much encouragement in the shape of prizes for cottagers and children, and this has assisted greatly in creating a healthy rivalry to the advantage of the Show and the district.

The President's special prize for a group brought good competition, Mr. James Brooks, gardener to W. Reynolds, Esq., The Grove, Highgate, taking the lead with a very bright arrangement of tall Fuchsias, Lilium lancifolium, and Hydrangea paniculata, edged with Cockscombs, Gloxinias, and Torenia. Mr. J. Brittain, gardener to F. Reckett, Esq., Caen Wood, Highgate, was second, Fuchsias, Francoas, and Eucharis being the chief features. Mr. H. Eason, gardener to B. Noakes, Esq., North Hill, was third. In amateurs' class for groups Messrs. Brittain and Eason were the prizetakers.

Fuchsias were well represented by moderately sized plants, but very

freely flowered. The premier award was taken by Mr. J. Brooks for six specimens, and Mr. Eason had a similar position for four plants. Messrs. G. Quelch, gardener to W. W. Howard, Esq., Hoscote, Shepherd's Hill, E. Agate, gardener to H. Taylor, Esq., Priory House, New Southgate, secured other prizes. The best six exotic Ferns came from Mr. J. Brooks. Mr. J. Brittain was second, and Mr. Eason third; all the plants of moderate size, but fresh and healthy, Adiantums and Aspleniums being chiefly represented. Mr. Eason had the best single flowering plants, a globular specimen of *Clerodendron Balfourianum*, well flowered, and evenly trained. The best single foliage plant was a fine *Seaforthia* from Mr. J. Brittain; *Caladiums* from Mr. J. Brook, *Coleuses* from Messrs. Eason, Brooks, and Quelch, and *Pelargoniums* from Mr. H. Rawson, gardener to J. H. Lloyd, Esq., Greenbank, Highgate, and Messrs. Shepherd and Eason were also notable features of the Show.

In the amateurs' class for a group of miscellaneous plants Mr. D. B. Crane, Archway, gained the President's prize with a tasteful arrangement of well grown plants, *Pelargoniums*, *Fuchsias*, *Coleuses* and *Balsams* edged with *Adiantums* and *Panicums*. For six stove and greenhouse plants Mr. Eason took the first place with neat specimens, followed by Mr. Brooks. In the class for the same number of foliage plants Mr. Eason was again first, his plants including a fine example of *Asparagus plumosus*, 5 feet high by 4 feet in diameter. Messrs. Brittain and Brooks followed. Cockscombs were grandly shown by Mr. J. Brooks, who was first in the class, followed by Mr. Agate.

Fruit was capitally shown, the principal prizes going to Messrs. B. Calvert, Reckitt, Brittain, Brooks and Agate. Grapes, Peaches, Nectarines, Strawberries, Cherries and Currants were all well represented. The Baroness Burdett Coutts' prizes for a collection of hardy fruit were won by Mr. E. Agate, gardener to A. Taylor, Esq., Priory House, Southgate, first, who had twenty-three dishes of excellent Strawberries, Currants, Gooseberries, Raspberries, Cherries and Currants, and Mr. C. Shepherd (second) with twenty-four good dishes. In another collection of fruits for cottagers and amateurs only the Baroness Burdett Coutts also offered two prizes, all the competitors being good.

Vegetables also were admirable from Messrs. Agate, Brooks, and Brittain. W. H. McLean (buttonholes). Cut flowers and floral decorations from Messrs. Brooks, Webber, and Brittain. T. L. N. Turk (hardy blooms, bouquet and stands). Roses from Messrs. Bateman and Agate were fresh and good. Pansies were also extremely good, especially those from Mr. J. Grove of Springfield Cottages, who won the first prize for twelve blooms.

Miscellaneous contributions, as usual, added materially to the Show. Mr. H. J. Jones, Ryecroft Nursery, Hither Green, Lewisham, had an especially beautiful group of Tuberous Begonias arranged with Ferns. Messrs. Wm. Cutbush & Son, Highgate, contributed a choice collection of cut Roses, comprising seven large boxes of fine blooms.



FRUIT FORCING.

PEACHES AND NECTARINES.—*Early-forced Trees.*—Those of the early varieties, such as Alexander, Waterloo, Early Beatrice, and Early Louise, or such as Hale's Early, Early Alfred, A Bec, and Royal George, which were started from early December to the new year, have been cleared of their fruit. Wood on which the fruit was borne has been removed, reserving extensions; all superfluous growths have also been cut away, so that the trees have the foliage fully exposed to light and air, influences essential to forming and perfecting the fruit buds and the thorough maturation of the wood. Syringe the trees, cleanse them of insects if necessary by the prompt application of an insecticide, and supply water, or in the case of weakly trees, liquid manure at the roots. Mulching will also tend to keep the roots active at the surface and prevent the premature ripening of the foliage. The buds will be sufficiently plumped and the wood matured to permit the roof lights being removed, which should not be further delayed, if not already done. This is a commendable practice, not the least of its advantages being the thorough moistening of the border by the autumn rains.

Successional Houses.—Trees started in February have the fruits ripe, and some are still ripening, the crop being later than usual on account of the somewhat cold season. The fruits, however, have swelled all the finer for the more gradual process. Royal George, Stirling Castle, a freer and finer form of Royal George, and Grosse Mignonne are not easily surpassed as midseason varieties, and Lord Napier with Elruge Nectarines are good. As the fruit is cleared off the trees cut out the wood that has borne fruit and thin the growth where too close, or where they are so close that the foliage cannot have full exposure to light and air. Cleanse the foliage by means of the syringe or engine of dust and red spider or other insect pests, if necessary using an insecticide. Keep the borders thoroughly moist, feeding trees that have carried heavy crops or are at all weakly or do not plump the bloom buds. Stop all laterals to one joint, or allow a little lateral extension if the trees have the buds in an advanced state, preventing the foliage ripening prematurely by continuing the root-action with growth. When the buds are

well formed, the fruit having been cleared from the trees, remove the roof lights. The exposure to rains and dew has an invigorating effect.

Houses with Fruit Swelling.—Trees started in March have the fruits swelled. They have stoned satisfactorily, as they do when the growth is not too luxuriant or improperly formed and matured. The conditions essential to a satisfactory growth and crop are three—viz., to have a border composed of rather strong loam, inclined to clay rather than sand, and preferably marly, with old mortar rubbish or chalk to afford calcareous matter, good drainage, neither too wide nor too deep borders—2 feet is plenty as regards depth, and half the width the trees have of trellis, duly watered and fed from the surface; the shoots thinly trained, no overcropping or neglect of thinning in the early stages, and a genial atmosphere so as to insure steady progressive growth. The leaves should be drawn aside, and the fruit raised by means of laths across the trellis so that the apex will be to the light. Water the borders with liquid manure, and keep the surface mulched with rather lumpy manure. Avoid a close fine surface likely to form a soapy mass, and exclude air. Ventilate early, in fact leave a little air on all night, syringing by 7 A.M., and through the early part of the day ventilate freely. When the sun loses power in the afternoon begin to reduce the ventilation and raise the temperature to 85° or 90° about 4 P.M., with a good syringing and damping, but it must be done with judgment, for when the water hangs for any length of time on the fruit during the last swelling process it is liable to damage the skin, causing it to crack, or if not that, it may give the fruit a musty flavour; therefore have the fruit dry before nightfall, and when the day is likely to be dull omit the morning syringing. Directly the fruit commences ripening cease syringing, but afford air moisture by damping available surfaces, especially the border whenever it becomes dry, ventilating rather freely in the day, and sufficiently at night to insure a circulation of air.

Late Houses.—In order to assist the swelling of the fruit observe the conditions laid down in the preceding paragraph. If wanted to accelerate the ripening ventilate rather freely in the early part of the day, and up to one o'clock, then keep the heat obtained by reducing the ventilation so as to secure 80° to 85°, and at about 4 P.M. close the house, syringing well, and no harm will come if the temperature rise to 90° or 95°, ventilating a little about six o'clock so as to let the pent up moisture escape, and the temperature gradually cool down. Keep the shoots tied down as they advance, allowing no more than are necessary for next year's fruiting or for furnishing the trees. Let all have space for development, the full exposure of the foliage to light and air. Keep laterals stopped to one leaf, also retain growth to attract the sap to the fruit. If there are any gross shoots which push laterals from the leaf buds cut them back to where the buds remain intact, or, if likely to derange the equilibrium of the trees, the equalisation of the sap, cut them off altogether. They only tend to promote gumming, imperfect setting, and certain casting of the fruit in stoning. Draw the leaves aside or away from the fruit, raise it from the lower side of the trellis, let it have as much light as possible, the sun acting directly on the apex. Peaches are no good unless coloured, the flavour corresponding thereto, other conditions being favourable.

Unheated Houses or Wall Cases.—The fruits have stoned satisfactorily, and are taking the last swelling. Where there are early varieties the fruits are ripening; the trees must not be syringed, but the trees must not lack water at the roots, and the borders should be damped, as air moisture is necessary for the health of the foliage. Afford liquid manure to trees swelling their crops, giving thorough supplies. We have found nothing surpass house sewage, but it must not be used too strong. It causes the foliage to assume a dark glossy hue, and the amount of chlorophyll in the leaves practically determines the colour and quality of the fruit. The fruits must be disposed so that they will receive light and air from all points as far as practicable by drawing the leaves aside, and raising them by means of laths across, and secured to the trellis to the front. Keep the growths thin, every shoot having space for full exposure to light and air. Syringe about 7 A.M., the house having a little ventilation constantly; increase the ventilation with the advancing temperature, contriving to have it full at 75°, or if it is desired to accelerate the ripening keep through the day at 80° to 85°, but always with ventilation, and close early to maintain the temperature, but not to raise it above 90°. Syringe again in the afternoon, about 5 P.M. Judiciously syringed there will not be any red spider, the roots being duly supplied with water and nourishment. Timely thinning increases the size of the fruits retained. It having been attended to early the fruit is a good size by the time the stoning is completed; the final thinning should be given as soon as the stoning is completed. One Peach to every square foot is ample, also for the large Nectarines. The reason Nectarines usually are smaller than Peaches is because they are not so liable to fall in stoning, and are in consequence left much closer.

THE FLOWER GARDEN.

Carnations and Picotees.—Showery weather came just in time to put new life into these, and the forwardest are opening beautifully. If not already done all should be lightly staked, several flower stems, if need be, being loosely attached to each stake. In order to have perfect blooms disbudding should be early resorted to, the largest or central bud only being left on each branch. Even these ought to be reduced in number if show blooms are desired for the July or early August exhibitions. Not a few otherwise fine blooms are apt to be disfigured by the bursting of the pod or calyx. This may be obviated by carefully and evenly splitting down the segments a little way all round, a piece of matting or thread being at the same time tied

moderately tight just below the divisions artificially or otherwise made in the calyx. Heavy rains ought to be warded off choice blooms with the aid of temporary canvas screens or other contrivances.

Seedling Carnations and Picotees.—These are by far the most floriferous, a good per-centage also being double flowering, while even the singles are very attractive, and much appreciated for filling vases. So very free flowering are they that it often happens no side growths are formed, and as a consequence the plants are of no service for the next season. A fresh batch of plants should therefore be raised every season, and those for flowering next summer ought now to be large enough for transferring to their final quarters. They will succeed well in mixed borders, but are most effective in beds, a sheltered and fairly warm border suiting them well. They move best out of small pots, but may be carefully transplanted from boxes and pans. It is advisable to form slightly raised beds about 6 feet wide for them, freely mixing a little fresh loam and some old Mushroom bed manure with the ordinary garden soil. Arrange the plants about 12 inches apart each way, fixing them firmly in the soil, and water occasionally in dry weather.

Propagating Carnations and Pinks.—It is yet too early to layer Carnations and Picotees, but both these and Pinks generally can be propagated by cuttings. No time should be lost in getting these in. In many instances these cuttings or slips would strike readily in handlights placed in a cool position, such as the foot of a north wall. All the preparation needed in this case is about 4 inches of fine loamy soil, sharp sand being freely mixed with it, and also distributed over the surface. A surer and quicker method of rooting these cuttings is to form a slight hotbed in a cool position, on this placing a shallow frame or several handlights, with a bed of sandy loamy soil for the cuttings to be inserted into. Short well-matured shoots should be selected, these being pulled off from the old plants, and after the dead or lower leaves have been removed be at once rather thickly and firmly dibbled into the soil prepared for them, and watered-in. The lights should be kept on closely, and shade afforded whenever sunshine reaches the lights, gentle waterings being given whenever the soil approaches dryness. In this manner a capital lot of serviceable plants will be ready for putting out in the autumn, these eventually producing much finer blooms than are obtained from old plantations.

Dahlias.—These are growing very strongly, plenty of moisture at the roots suiting them well. Being of a very brittle nature they must be early supported by stakes. As a rule one strong branching stem produces more and finer blooms than several weakly ones. If extra fine or show flowers are desired the side shoots must be early and freely thinned out, a few of the strongest of those reserved being each given a separate stake. In addition to frequently removing superfluous side shoots it is also advisable to well thin out the buds, the plant's energies being principally concentrated on a few well-formed central buds. In order to fully and evenly develop the latter keep the roots well supplied with soft water in dry weather, liquid manure being given occasionally.

Roses from Cuttings.—Dwarf Roses are the best in every way. They are the least liable to be killed by frosts, are the least unsightly at any time, flower earlier, and frequently the most continually. Those on their own roots are the most valuable. They cannot often be bought, but they can be raised from cuttings without much difficulty. The start might well be made now with short lengths of firm young wood, and continued, later on, with longer pieces of well-ripened shoots. The frames or handlights may be prepared exactly as recommended in the case of Carnations and Pinks, with or without bottom heat, and arranged in a cool site. Select shoots that have produced a flower, these being taken off with a thin slice or heel of old wood attached and shortened to the third or fourth joint, the lower or small leaves only be trimmed off. Do not let them flag badly or become dry before firmly fixing them in the soil, and in all other respects treat as advised for Carnations. These remarks apply to both Hybrid Perpetuals and the Teas and Noisettes, the two latter being especially to be desired on their own roots, whether for pot or open air culture, the strong suckers or shoots thrown up from their base keeping the plants in a vigorous and floriferous state.

Rhododendrons.—It is seldom these flower so freely as they have done this year. What was once a mass of flower is now, however, replaced by seed pods, and these ought at once to be gathered, or otherwise they will greatly weaken the shrubs. Even if they did not do this they will soon present a most unsightly appearance.

KITCHEN GARDEN.

THE WEATHER AND THE CROPS.—Whatever turn the weather may take for the better now the season must be regarded as exceptionally unfavourable for vegetables. Leaf development is about up to the average, but not so luxuriant as might be expected from the amount of moisture, and the root or fruit, as the case may be, is deficient in quantity, and still more so in quality. We have had spring Onions sown in March 14 inches in circumference by the last week in July, and now under the same treatment they are not more than 3 inches round. Peas which ought only to have been 3 feet high are 5 feet, and those supposed to attain the latter height have run up to 7 feet or 8 feet, while the produce has not extended in proportion.

THE POTATO DISEASE.—As might have been expected many varieties of Potatoes are becoming diseased rapidly. We have never seen early varieties so badly affected, and although the later ones are not yet "gone" to any extent, it will be surprising if all are not badly affected. Those who bought their tubers at 20s. and 30s. per ton last winter need not expect to have them again at that rate next winter.

A dry atmosphere and a dry soil are the only antidotes for the Potato disease. At the same time crops that are matured should be lifted and stored when it is dry, and the utmost care should be taken that the whole of the diseased tubers are separated from the sound ones.

THINNING VEGETABLES.—In dry seasons vegetables are better when not too much thinned, as a close foliage shelters the roots and retains the moisture; but at present thickly growing crops are the worst, as they are only a mass of leaves, and the smaller plants removed that all the air and light possible may be admitted to the best of the produce. This applies to all crops, and particularly to spring-sown Onions, Turnips, Carrots, and Parsnips. Where economy is rigidly considered some of these advanced thinnings may be used in the kitchen, but apart from this it would be better to pull them up and throw them away than allow them to remain to ruin the whole crop.

TOMATOES IN THE OPEN AIR.—These will require extra care to produce any quantity of ripe fruit. Our plants are bearing many green ones in a backward state, which will probably ripen in September. At present do not give any stimulant. Confine the plants strictly to one or two main stems, remove any large leaves that are screening the fruit, and if there are any spare frame lights place these end uppermost against the wall to slope outwards and form a temporary protection for the plants.

PARSLEY.—There is much truth in the proverb, "misfortunes never come singly." Our Parsley is attacked by the grub. It became yellow and drooped in a few days. We mixed one wineglassful of petroleum to a gallon of water and soaked it with this. It has undoubtedly destroyed the grub and the Parsley is improving, but it will be a long time before it attains vigour. Fortunately we had drawn a number of plants from these rows four or five weeks ago and planted them in another part of the garden, and these are quite free from maggot and healthy. There are some crops we do not approve of confining to one sowing or one plantation, and Parsley is one of them. It is a calamity to be without Parsley at any time, more especially in the winter and spring months. There is no substitute, and the utmost endeavour must be made to secure a supply. This we have invariably done by sowing a quantity of seed at the end of July or early in August in rich soil free from worms. The plants from this sowing will be dwarf and compact at the beginning of winter, and they are all the better of this, as they withstand severe weather better than huge leaves.

CABBAGE FOR NEXT YEAR.—One of our best crops this season was spring Cabbages. We had abundance from the 1st of April onwards. The seed that produced the first plants was sown during the first week in August, 1889. The last week in July and early in August are also times when sowing may be done in all localities, but the surest way of securing a good class of plants and meeting the variations of the season is to sow twice at the times named. The seed may be sown broadcast in beds 4 feet wide and in good soil, and sufficient should be sown to ensure surplus plants. Some do not sow seed but buy their plants, but this is not so convenient as raising the plants in each garden. The dwarf compact growing sorts are the only ones that should be grown, and only the best strain obtainable should be introduced.

THE BEE-KEEPER.

APIARIAN NOTES.

THE WEATHER.

THE bees' movements on the 11th inst. did not disappoint us, although thirty-six hours passed before an improvement took place. The mean temperature of the day rose about 10° above what it had been previously, accompanied with a terrific hurricane of wind, which lasted fully two days, and doing much mischief in laying crops and unstaked flowers, and breaking the branches of trees. The 15th was breezy with some sunshine, but the temperature never rose above 60°. On the 16th, however, it rose for a short time to 75°, and was steady for a long time at 65°. The 18th was again dull with the thermometer at 60°; with a falling barometer, and idle bees, looks like much rain, which has never been absent a single day since May 4th. Only three and a half days have the bees had as honey days, two and a half in May and on the 16th July. Not one in June.

WEIGHING HIVES.

This I never attempted until the morning of the 16th, but not observing whether the chain rested upon the hive or the ground, prevented deciding whether 3 lbs. or 8 lbs. had been made by an average hive which weighs about 20 lbs. only. My best pure Carniolian weighed at the same time 56 lbs. These weights are for the contents of the hive only, as gross weights are misleading. All hives should have the tare marked upon them.

PROSPECTS OF HONEY.

No time should be lost in feeding stocks short of stores, at least 10 lbs., and at the end of August the remainder necessary for winter stores. The year 1890 with many bee-keepers will be a blank so far as Clover honey is concerned, and if we had any assurance that the Heather would give a good yield we should not care, as it is most in repute, but the temperature is too low, and the lack of sunshine is against it and our hopes.

CLOVER HONEY.

This is scarce in some districts, if the statement by a respectable honey dealer is to be relied upon. When in Glasgow on June 15th he said he had already had a consignment of a considerable quantity of this year's Clover honey, and could be supplied with all he required. I did not see it, so cannot give my verdict whether he had been deceived or not, but it is remarkable to be removing supers from hives at a time when the hills of the same county were covered with snow.

RELIABLE INFORMATION.

In Rothesay we have a lady who has a Stewarton hive, consisting of three 9-inch body boxes on four supers full of bees and comb, the two under supers being nearly completed and full of honey—a lesson worth taking, that placing the empty super uppermost is the proper way to manage supers. Another case is that of a Renfrewshire bee-keeper, who has some heavy hives with the same number of supers also filled. The temperature at Rothesay may be higher than we experience, and the heavy hives may be partly due to the trees in the district, which the bees can gather from even while raining if the temperature be 65° and above that; below it bees seem not inclined to venture out, and the flowers may possibly not secrete honey when the temperature is lower.

SWARMS.

Swarms in many places are scarce, and some bee-keepers have not had one. An effort should be made early before all the drones are killed to bring forward a number of young queens, because although last year's queens may live until another year, they will not be so prolific as more youthful ones, so no pains should be spared to secure them.

There is perhaps no better plan than to remove the queen regnant with a portion of the combs with bees adhering, placing it upon a new stand, and allow the majority of the bees with all the drones to remain on the old one. At the end of ten days divide into as many nuclei as desirable, and if the queen or royal cells are secured against strangers, combs from other hives with brood and young bees may be added to them, feeding all nuclei, and the stocks containing drones must not be neglected. After the young queens are laying the old queens may be disposed of according to circumstances.—A LANARKSHIRE BEE-KEEPER.

ENGLISH AND AMERICAN METHODS.

A CORRESPONDENT of this Journal once advised me to read American journals to post me up to the times. It is well known that I have always advocated thicker and broader top bars than are generally used, which, when slides are also used, prevent "burr combs" and blackened or brooded supers. This advice was given when the Americans and their followers in this country were floundering over the difficulty. Probably the following extracts have been brought about by the influence of my pen. The editor of American *Gleanings* says:—"There are two or three matters of great moment now being discussed. The importance of thick top bars, and the doing away with burr combs and honey boards, cannot be over-estimated. Having frames suitable for out apiaries for moving and shipping is bound to come up this year, and we hope a solution of the problem may be reached."

Recognising the advisability of cheapness and handiness of hives for moving about, the editor adds, "We don't want anything that will increase the expense of the frames more than ten cents per hive." After paper packages had been tried, and announced in these pages, the Americans took the matter up. Spreading brood is denounced too, so also is the shutting in of bees at any season

"unless when in transit." Ventilation from beneath is receiving attention, and I have no doubt from the form of many American hives in the near future they will not be unlike the cheap "Lanarkshire" hive. Benton's queen cage is pronounced to be the best invented I believe, as was the candy (termed "Good's") by "A Hallamshire Bee-keeper," although many years previous to the Benton era I used similar cages.

THE HONEY PRESSER AND MEAD.

Different sized cylinders are desirable when the presser is used for other purposes than honey. After the honey is pressed from the combs warm water should be poured over them, and the combs thoroughly macerated. Two card like instruments are suitable for this purpose. When macerated steep for twenty-four hours, then strain and pass through the presser, then the liquor is ready to be converted into mead; boil for an hour, scumming the froth as it rises, then when milkwarm add a little yeast (a few hops having been previously boiled in the liquor); stir well, and cask when fermentation has well begun; bung closely, and stand the barrel in a moderately cool dry place. The above receipt appeared before, but some may have not seen it. The wax should be extracted immediately after all the liquor is pressed out. If they lie about long after acari take possession.—A LANARKSHIRE BEE-KEEPER.



*** All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Benefit Society (Endymion).—If you send your name and address the particulars you require will be supplied by post.

Ventilating Vineries (F. I.).—The treatment you are giving your Vines is the correct one, more especially as the Grapes are beginning to colour. A little fire heat would of course be advantageous, but as you do not give it the necessity is all the greater for a circulation of air constantly, so as to prevent a close vitiated atmosphere. It will assist the Grapes in colouring, and further their quality. Continue the treatment you have proved satisfactory.

Name of Insect (Dyffryn, M.A.).—The curious insect forwarded is a specimen of *Sirex gigas*, one of the horn-tailed sawflies. The species is much more abundant some seasons than others; it occurs most frequently in the vicinity of Pine forests or plantations, in the solid wood of which the larva or grub feeds, also sometimes upon that of other trees, the Elm for instance. It has the power of producing a loud buzzing noise, and for this reason, though really harmless, it is an object of alarm in some countries, being supposed to be a stinging insect. The borer at the tail is used to pierce deeply into wood for the deposition of eggs; it is furnished with teeth, and acts in a manner similar to the centipede of the carpenter.

Luxuriant Growth on Young Pyramid Fruit Trees (St. Julian Arabria).—Having cut out all useless growths, and shortened side shoots on main branches, you ask What you are to do with the main branches, some of which are 2 and 3 feet long? Stop them at once, merely removing a few joints of the soft growths. This will strengthen the part below, and especially the buds at the lower part of the shoots, whilst leaving the shoots a greater length than is generally desirable will afford an outlet for the overabundant sap. Any growth resulting will be from the points of the shoots, and these can be pinched at a few joints of growth, but not later than early September. At the winter pruning the branch or leading shoots may be shortened to about 15 inches of their base. The espalier trees have not pushed side shoots because the leaders were not cut back as they ought at the winter pruning. There is no remedy but after the leaves have fallen cutting back to the point, or a little lower, where you desire to originate the side branches. Trees in the luxuriant condition yours present should be lifted in autumn and the soil made firmer.

Mildew on Vines (*C. H. S.*).—As Vine mildew is external to the host plant it is readily destroyed. No remedy for this fungus (*Oidium Tuckeri*) is equal to that first discovered—viz., sulphur. Flowers of sulphur dusted over the leaves and other infested parts, including the Grapes, destroy it without any injury whatever to the foliage or Grapes. Those will be injured more or less, but that is due to the action of the fungus before its destruction, not being in any way due to the remedy. The following method will to some extent damage flowers and discolour paint, otherwise it is very efficacious—viz., boil 1 lb. flowers of sulphur and 1 lb. quicklime in a gallon of water for ten minutes, using an earthen vessel, keeping constantly stirred whilst it is boiling. Let stand to settle, and when cool pour off the clear liquid. Syringe the Vines with a mixture of this at the rate of a half pint to a 3 gallon watering pot of water, using a fine-rose syringe. Coating or washing the hot-water pipes after heating them to a temperature greater than the hand can bear with a mixture of flowers of sulphur and quicklime in equal proportions of 1 oz. to 3 quarts of water, keeping the house closed for about an hour to retain the fumes, which will destroy the fungus, then ventilate as usual. There are several advertised compositions that are equally effective. As mildew is most destructive in ill-ventilated structures, it may often be prevented, and is always checked by judicious ventilation.

Galls on Lime Leaves (*T. W.*).—The samples sent are what have been popularly called Lime Leaf Nail Galls, attributed to a gall mite named *Phytoptus Tiliæ*, though it is uncertain whether under this name more than one species may not be included. Upon their first appearance these galls are green, then they become yellow, this passes into red, next they are purplish, and finally brown. Their history is interesting, since the Lime was observed to be thus infected more than 150 years ago by the celebrated naturalist Reaumur. He was, however, much puzzled by them, and discovering in some of them a solitary larva, he supposed they were produced by a kind of fly or beetle. If he was right in his observation such larvæ could only have entered in order to prey upon the mites such galls may contain, for they are not attributable to other insects. So small and transparent are these mites that it is difficult to find them, and the plan generally adopted by naturalists is to wash them out with water and then examine the liquid. On opening one of these galls it mostly appears to be full of hairs of a peculiar growth caused by the punctures of the mites. It cannot be said that the history of these galls is as yet properly elucidated, and it is maintained by some that the mites which they commonly contain are not the real parents of the galls, but "inquillines," or after tenants. Nor can we say how it is that of two trees, seemingly growing under the same conditions, one will be found swarming with galls and the other almost as entirely free from them.

Budding Manetti Stocks (*J. H.*).—The stocks being in rows earthed up like Potatoes, take a hoe or spud and remove the earth from the stock, so as to insert the bud as low as possible. When this is done proceed to cut the bud just the same as you do for the Briars, and make the incision as low as you possibly can; the lower down the better, as the fewer will be the suckers—indeed, you should almost bud on the roots, if possible. At any rate, strive to insert the buds as low as you can. Only insert one bud in each stock. Choose the same side of the stock all down the line, and also select a place as free from knobs or irregularities as you can find. Make the incision in the form of a T, and when the bud is safely in tie up well beyond each end of the bud with rough cotton or worsted. Ladies often use wool, and nurserymen, bass or raffia or cotton. You must not replace the earth, but leave the bud showing, or rather the cotton, so that in the course of a week you can see whether the bud has taken or not. If it has not, bud the other side of the stock. Do not touch the Manetti shoots, but leave them to grow as luxuriantly as they will till the following spring; then remove the cotton and cut back the Manetti to the bud. The best time for budding the Manetti is after rain, and if you have no rain give the stocks a copious watering, and you will find the bark run. August is the best time for budding Manettis. All the varieties you have named do well on the Manetti; in fact, all Hybrid Perpetuals except La France, which, having some Tea blood, never does so well on this stock as on the Briar.

Figs Failing (*W. R.*).—The Figs sent are abortive. They are in that condition known as flowering, when the fruit opens at its apex or eye for the admission of air to the organs of fructification. The most probable cause of the condition of the fruit is excessive luxuriance of the tree. This is fatal to seeding, and is analogous to stoning in Peaches, &c. The only remedy is to diminish the vigour of the tree, or give it more heat with corresponding air, so as to secure the better elaboration of the sap and its consequent assimilation. As the tree is in a cool house we should keep the growths thin, in order that air and light may have free access, and in autumn cut the roots about 2 feet from the stem and quite down to the bottom of the border. This, if done early in October, will check late growth, the wood then having a better chance of ripening. The soil removed should be returned and made firm. In case the roots have the run of a wide border it would be the best plan to lift the tree in autumn so soon as the leaves turn yellow, and, taking out the soil, put in a wall so as to confine the roots to a space of not more than 3 feet wide and double the length, or 6 feet, putting in a foot of drainage and 30 inches depth of compost, which should consist of good turfy loam of medium texture, adding a fifth of old mortar rubbish and a sixth of road scrapings thoroughly incorporated. In this lay the roots near the surface and make the soil firm. This will induce a sturdy short-jointed growth, and with plenty of light

and air the wood will be thoroughly solidified as made, and fruitful. Mulching and feeding will be necessary during growth.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*J. Gibson*).—If the flowers are large, and the leaves have kidney-shaped glands, it is Early Beatrice; if the flowers are small, and the glands of the leaves kidney-shaped, it is Early Louise. (*W. H. Sewell*).—Winter Pearmain.

Names of Plants.—We only undertake to name species of plants not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*Subscriber*).—*Cotyledon umbilicus*. (*W. R.*).—1, *Linaria purpurea*; 2, *Salicornea herbacea*; 3, *Thalictrum alpinum*. (*Pelargonium*).—The plant is one of the Broom Rape family parasites as you imagine. It is *Lathraea Squamaria*. (*R. S.*).—1, *Adiantum tetraphyllum*; 2, *A. concinnum latum*.

COVENT GARDEN MARKET.—JULY 23RD.

H EAVY supplies now to hand, prices remaining unaltered with a fair business doing.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.		
Apples, $\frac{1}{2}$ sieve	2	0	to	6	0	Grapes, per lb.	1	3	to	3	0
" Nova Scotia and						Lemons, case	10	0		15	0
Canada, per barrel	18	0		25	0	Melons, each	2	0		3	6
" Tasmanian, p. case	15	0		0	0	Oranges, per 100	4	0		9	0
Cherries, per $\frac{1}{2}$ sieve ..	3	6		10	0	Peaches, dozen	1	0		12	0
Currants, Black $\frac{1}{2}$ sieve	5	0		5	6	St. Michael Pines, each..	2	0		6	0
" Red, $\frac{1}{2}$ sieve ..	3	6		5	0	Strawberries, per lb. ..	0	2		0	6

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.	
Artichokes, dozen	0	0	to	0	Mushrooms, punnet ..	1	6	to	2	0
Asparagus, bundle ..	0	0		0	Mustard & Cress, punnet	0	2		0	0
Beans, Kidney, per lb. ..	0	9		1	Onions, bushel. . . .	3	0		4	0
Beet, Red, dozen	1	0		0	Parsley, dozen bunches	2	0		3	0
Brussels Sprouts, $\frac{1}{2}$ sieve	0	0		0	Parsnips, dozen	1	0		0	0
Cabbage, dozen	1	6		0	Potatoes, per cwt. .. .	3	0		4	0
Carrots, bunch	0	4		0	" New, per lb. ..	0	2		0	0
Cauliflowers, dozen. . .	2	0		4	Rhubarb, bundle	0	2		0	0
Celery, bundle	1	0		1	Salsafy, bundle	1	0		1	6
Coleworts, doz. bunches	2	0		4	Scorzonera, bundle ..	1	6		0	0
Cucumbers, doz.	2	0		3	Seakale, per bkt. .. .	0	0		0	0
Endive, dozen	1	0		0	Shallots, per lb. .. .	0	3		0	0
Herbs, bunch	0	2		0	Spinach, bushel	1	0		2	0
Leeks, bunch	0	2		0	Tomatoes, per lb. .. .	0	6		0	8
Lettuce, dozen	0	9		1	Turnips, bunch	0	4		0	0

CUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.		
Arum Lilies, 12 blooms ..	2	0	to	4	0	Mignonette, 12 bunches..	2	0	to	4	0
Asters, per bunch, French	1	6		2	0	„ Fr. large bnch ..	0	0		0	0
Bouvardias, bunch ..	0	6		1	0	Narcissus, 12 bunches ..	0	0		0	0
Carnations, 12 bunches ..	4	0		6	0	Pæony, dozen bunches ..	0	0		0	0
„ 12 blooms ..	1	0		2	0	Pansies, dozen bunches ..	1	0		2	0
Calceolaria, doz. bunches	4	0		6	0	Pelargoniums, 12 trusses	0	9		1	0
Cornflower, doz. bunches	1	6		3	0	„ scarlet, 12 bnchs	3	0		6	0
Eschscholtzia, 12 bunches	2	0		4	0	Pinks (various), doz. bchs.	3	0		6	0
Eucharis, dozen	4	0		6	0	Primula(double)12 sprays	0	6		1	0
Forget-me-not, doz. bnch.	1	6		4	0	Ranunculus, doz. bunches	0	0		0	0
Gardenias, 12 blooms ..	2	0		4	0	Roses (indoor), dozen ..	0	6		1	6
Iris, various, dozen bnchs.	6	0		18	0	„ Moss (Eng.), 12 bch.	6	0		13	0
Lapageria, 12 blooms ..	2	0		4	0	„ Red (Eng.), 12 bch.	2	0		6	0
Gladiolus, 12 bunches ..	4	0		9	0	„ Red, 12 blooms ..	1	0		2	0
Gypsophila, per bunch, Fr.	1	6		2	0	„ Tea, white, dozen..	1	0		3	0
Lilium, various, 12 blms.	0	6		1	0	„ Yellow	2	0		4	0
„ longiflorum, 12 blms.	2	0		4	0	Spiræa, dozen bunches ..	6	0		9	0
Marguerites, 12 bunches	2	0		6	0	Tuberose, 12 blooms ..	0	6		1	0
Maidenhair Fern, dozen						Wallflowers, doz.	0	0		0	0
bunches	4	0		9	0						

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.		
Aralia Sieboldi, dozen ..	6	0	to	12	0	Geraniums Scarlet, p. doz.	3	0	to	6	0
Arum Lilies, per dozen ..	8	0		12	0	Heliotrope, per doz. ..	5	0		8	0
Arbor Vitæ (golden) doz.	6	0		8	0	Hydrangea, doz. pots ..	9	0		18	0
Azalea, various, per dozen	0	0		0	0	Lily of the Valley, 12 pots	0	0		0	0
Calceolaria, per doz. ..	6	0		9	0	Lobelia, per doz.	3	0		4	0
Climbing Plants, various,						Marguerite Daisy, dozen	6	0		12	0
dozen pots	4	0		9	0	Mignonette, per dozen ..	4	0		6	0
Cyclamen, per dozen ..	0	0		0	0	Musk, per dozen	2	0		4	0
Deutzia, 12 pots	0	0		0	0	Myrtles, dozen	6	0		12	0
Dracæna terminalis, doz.	24	0		42	0	Nasturtiums, dozen pots	3	0		4	0
„ viridis, dozen ..	12	0		24	0	Palms, in var., each ..	2	6		21	0
Epiphyllum, per dozen ..	0	0		0	0	Pelargoniums, per doz. ..	6	0		12	0
Erica, Cavendishi, per pt.	0	0		0	0	Rhodanthe, per dozen ..	4	0		8	0
„ various, dozen ..	12	0		18	0	Roses (Fairy), per dozen	8	0		10	0
Eunonymus, var., dozen ..	6	0		18	0	„ 12 pots	0	0		0	0
Evergreens, in var., dozen	6	0		24	0	Saxifraga pyramidalis,					
Ferns, in variety, dozen ..	4	0		18	0	per dozen	18	0		24	0
Ficus elastica, each ..	1	6		7	0	Spiræa, 12 pots	6	0		9	0
Foliage plants, var., each	2	0		10	0	Stocks, per doz.	4	0		6	0
Fuchsia, per doz.	4	0		9	0	Tropæolums, various, per					
Geraniums, Ivy, per doz.	3	0		6	0	dozen	3	0		6	0

Bedding Plants in variety, in boxes and pots.



PROGRESS.

PROFESSOR HENRY STEWART has recently in the *New York Times* called special attention to the Instantaneous Butter Maker, of which we gave a brief description in our article of July 10th. He shows how admirably it gets rid from both separated milk and the butter of all the impurities commonly found in milk—i.e., the fibrine, the mucus, the scales of tissue, &c., leaving it quite pure. He also explains how, by a fortunate application of dynamics and mechanics, the dairyman's labours are reduced and made more effective with a proportionate gain and profit. His prospects are brighter than they have been for several years, for his greatest difficulty is in course of removal—that of the intricate manipulation of milk and cream, with all the adverse conditions of temperature and exacting work and oversight to contend with. There will now, he asserts, be every chance for making good butter, instead of so many chances against it. With well fed healthy cows, and the exercise of due care in the housing and milking, the making of pure butter up to a uniform standard of excellence becomes a very simple matter, and a good trade is certain to follow if only due care is taken with the salting and packing.

Vendors of this splendid implement will do well for themselves and well for farmers if they will be content with a moderate profit upon the cost of its manufacture, so as to ensure a large sale. A cheap motor has now also become a necessity for most dairies, and there will be a growing demand for it with the enlargement of farm dairies, or rather the growth of herds of dairy cows; for the new implement will enable us to dispense with milk pans and cream crocks, but it must not be forgotten that a regular supply of from 200 to 300 quarts of milk is requisite for a profitable use of the instantaneous butter maker. At many farms the entire dairy yield of milk does not amount to above a half or a third of that quantity. Butter factories are still few and far between, and the only course open to farmers generally is to curtail their Wheat crops still more, to extend the area of Oats, roots, and fodder crops, to substitute ensilage for haymaking, and to keep more cows. This would enable them to derive full benefit from the milk and butter trade, and also to materially improve their cattle business. The purchase of store cattle would then be avoided altogether. Cheap animals and cheap food, all home produce, upon which not a penny has been wasted for middleman's profits, must answer. The food would be pure, wholesome, and nourishing, and the cattle ought to be superior to most of the purchased store beasts, and they will be if due care is taken in the selection of the stud beasts.

Mention of the middleman is a reminder of the Rev. Harry Jones' efforts to bring the farmer into direct communication with the consumer of his produce. His proposal that railway companies shall furnish lists of shopkeepers in London who are willing to receive produce direct from farmers, the company collecting the money and transmitting it to the farmer, is hardly practicable. The responsibility and risk involved is precisely that for which the middleman makes the farmer pay so dear, and judging from our experience of railway rates, very much upon a par with the middleman's exorbitant commission upon sales. We shall indeed be surprised to find any railway company at all willing to pose as the farmer's friend.

The fallacy of bare fallowing to rest the land is now pretty well exploded, and extension of root culture and of green crops has probably given an impetus to bastard or half fallows. It hardly ever answers to rush into extremes, and when land is taken up in

very foul condition or becomes so through a succession of wet seasons, recourse must be had to a bare fallow. The tillages must be done with care and caution, ploughs, drag, and light harrows, crosshill and plain rollers, and even hand forks, must all be brought into use to eradicate the weeds. The work must be thorough and deliberate, and each field must be treated according to its requirements. It is mere waste to sow corn in a foul seed bed, and we could only say "serve you right" to an old tenant of a heavy land farm who recently complained that he had been obliged to plough in a field of Barley as the crop was smothered by weeds. To have land clean in the fullest sense of the term, and that is free from weeds and superfluous water, is essential to progress, whatever may be our system of cropping. We can then proceed to store the soil with fertility and to plant and sow with confidence, only we must be very sure our seed is good, true, and free from weed seeds, for we doubt not that Charlock and Poppy have first entered the soil of many a farm through the coulter of the seed drill.

WORK ON THE HOME FARM.

St. Swithin's has passed without rain, and the indications of a change to fairer weather cause us to hope still for a tolerably full corn harvest and some good hay yet. But the rain of the past six weeks has given such vigorous growth to weeds that it will prove by no means an easy matter to have clean root fields by harvest. Early sown Mangolds were singled and the weeds were well under before the wet time set in. If subsequently weeds have grown so have the Mangolds and early Swedes, which now have the leaves meeting well across the space between the rows, and keeping down weed growth.

Two important points of practice to which managers of home farms on heavy land should now give special attention are the provision of an ample store of burnt clay and other ashes, and the turning to account the household sewage if the farm includes the park, or is near the mansion with its large staff of servants, laundry, kitchen, and stables. The supply of sewage from such an establishment is considerable, and it should on no account be wasted, but should flow through a main pipe into a tank, whence it can be removed either for distribution by a water cart and spreader on pasture, or to saturate ashes, ballast, or charcoal dust, either for ploughing in, or top-dressing pasture. Wood ashes so treated are an excellent manure for the Clovers in permanent pasture, and all really good pasture contains a large proportion of Clover, especially of the white perennial variety. Get rid of all useless banks and mounds on the farm, and turn the soil to account by burning it. In very hot dry weather the burning is easily done without coal, but in showery weather some coal is necessary.

Sheep are so profitable that the provision of plenty of food for them at all times is desirable. As the folds are removed off the Tares let the ploughs follow at once, then the harrows, roller, drill with late Turnip seed, and then a turn or two of light harrows finishes the work. There should be no delay about this, as a full crop will soon be a speculative matter from the advanced season and risk of hot dry weather. Land may also be prepared for drilling Imperial and Drumhead Cabbage early in August, or if a field cannot be spared, then get ready seed beds, and sow 1 lb. of seed per acre about the first week in August.

METEOROLOGICAL OBSERVATIONS.

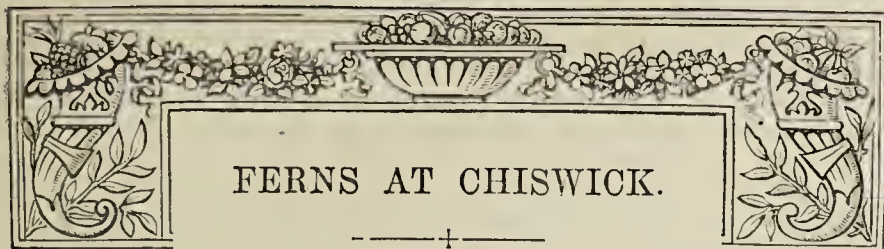
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain
1890. July.		Baromet- er at 32° and Sea Level.	Hygromet- er.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min.	In sun.	On grass		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Sunday 13		29.869	62.2	78.8	S.	56.5	70.6	53.0	110.6	52.2	—	
Monday 14		29.853	64.1	58.9	S.W.	57.9	70.9	58.4	117.9	57.7	—	
Tuesday 15		29.883	64.2	59.7	S.E.	58.8	75.4	59.0	124.4	56.8	—	
Wednesday 16		30.105	64.7	56.8	S.E.	61.1	74.2	50.4	111.0	47.8	—	
Thursday 17		29.947	68.2	62.3	N.	61.8	75.6	53.3	105.0	55.3	1.671	
Friday 18		29.861	61.2	57.0	N.W.	61.8	70.0	56.0	117.9	56.2	0.410	
Saturday 19		29.813	56.9	55.1	N.W.	60.9	63.8	55.8	113.0	56.1	—	
		29.907	63.1	58.4		59.8	71.5	55.8	114.3	54.5	2.081	

REMARKS.

13th.—Fair, with some sunshine, but spots of rain in the evening.
14th.—Fine, and occasionally bright.
15th.—Bright and warm; the first summerlike day for two or three weeks.
16th.—Bright and warm morning; hazy and frequently cloudy in the afternoon.
17th.—Cloudy till about 4 P.M., then wet; thunder, lightning, and heavy rain in evening, the rain lasting till after midnight.
18th.—Wet till 6 A.M.; bright morning; generally cloudy in afternoon; wet evening and night.
19th.—Heavy rain at 6 A.M.; dull, with occasional drizzle in morning; afternoon and evening generally bright, but occasional slight showers.
The week has been noteworthy on account of the occurrence of one of those great rains which occur at long intervals, and when they come produce considerable damage. Although here the storm of the 17th yielded 1.67 in., more than twice that amount fell at some stations in Berkshire and Hertfordshire.—G. J. SYMONS.



FERNS AT CHISWICK.

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THE Royal Horticultural Society's Fern Exhibition and Conference in the Chiswick Garden last week provided considerable interest for the admirers of these graceful and varied plants. The exhibitors were few, but the collections staged have probably never been equalled at any society's show in this or any other country. There were from 200 to 600 distinct forms in each contribution, representing not only the best of the exotic Ferns, but also what have become even more numerous—the variations of British Ferns—which now appear to be almost endless. The schedule comprised six classes, and in the first of these for British Ferns ten groups were enumerated to include all the principal genera that have yielded variations freely either wild or under cultivation. Hardy foreign Ferns formed the next class, then there were others for stove and greenhouse Ferns, Selaginellas and Lycopodiums, "Ferns best adapted for cultivation in rooms," and "Ferns for hanging baskets." The object throughout was evidently to procure both collections and selections, but no provision was made for the tasteful arrangement of Ferns in groups as showing the special cultural value of Ferns for ornamental purposes. The large tent nearly 200 feet long had a stage at each side, and upon these the Ferns were arranged very much in the way they are too often seen in warm or cool houses in gardens, which is the least adapted for displaying the beauties of these plants to advantage. To have provided for groups of Ferns arranged for effect would have required at least another large tent.

The official lists of awards and certificates will be found on another page, but prominence must be given here to three of the collections, because they were of such an exceptional character that individually they would have formed an exhibition of importance. A silver challenge cup offered by Mr. N. N. Sherwood for the best collection of hardy Ferns and their varieties was won by Mr. E. J. Lowe for the present year, his collection being a remarkable one in all respects, and the finest series of Fern variations ever exhibited, all extremely interesting, and many exquisitely beautiful. Then a gold medal was adjudged to Messrs. J. Veitch & Sons with a representative group of stove and greenhouse Ferns in all their most distinct and graceful forms, comprising those introduced by the firm in recent years (see page 91), a group of hybrid, or supposed hybrid, Ferns, and a large collection of crested exotic Ferns, such as are now employed in decorative purposes so generally. Messrs. W. & J. Birkenhead, who have so long made a specialty of these delightful plants, were also honoured with a gold medal for their wonderful collection of choice Ferns, carefully arranged to represent nearly the whole of the classes enumerated in the Society's schedule, all fresh and neat little plants. For Mr. C. T. Druery's handsome plumose and other Ferns, and for Mr. May's extensive group of decorative Ferns, medals were also awarded, and the Royal Horticultural Society may be congratulated upon the horticultural success of their Fern Exhibition, and upon having performed a useful service in calling attention to a class of charming plants that are not so popular as their merits might be expected to render them.

Why Ferns should be neglected by amateur cultivators is difficult to understand. The majority of the most ornamental are easily grown, and they are certainly not expensive to purchase, yet

anything like a collection is rarely seen in gardens. A few Adiantums, Aspleniums, and Pterises, which are largely grown for decorative purposes, are almost the only kinds found in gardens generally, and with the exception of a very few enthusiastic amateurs like Messrs. Lowe and Druery, we have either to visit the leading nurseries or the chief botanic gardens to find Ferns adequately represented. To form an idea of the marvellous extent of variation in Ferns it is only necessary to glance through the great collection at Kew, noting the stately tree-like Cyatheas and Dicksonias, which rear their imposing crowns of fronds far above all their relatives; the graceful Adiantums, the powdered Gold and Silver Gymnogrammas, the luxuriant and elegant Davallias, the exquisitely beautiful Cheilanthes and Nothochlaenas with fronded tracery, the distinct climbing Lygodiums forming long wreaths and festoons of twining fronds, the bold Aspleniums, the rugged Marattias and Angiopteris, the creeping Polypodiums, and lastly, those gems of the Fern world, the "Filmies," Trichomanes, Hymenophyllums, and Todeas, the translucent fronds of which appear in some cases frosted with crystals or glittering with liquid diamonds. These are only a few of the types that take the attention of a passing visitor to our national collection, but to those who possess a more intimate knowledge of the hundreds of species now cultivated in British gardens there are abundant other attractions of scarcely less importance; in fact nearly every individual Fern is invested with sufficient character to render it an interesting study to all who care to devote a little time to its careful examination.

There is no doubt also that from a public exhibition point of view Ferns have been comparatively neglected. Their history, structure, and culture, too, afford abundant materials for discussion at a conference, which can easily be rendered of an exceedingly interesting and important character. It is true that some societies have provided classes for specimen Ferns at the larger exhibitions, the northern societies in particular also giving encouragement to hardy Ferns, but beyond that little has been done. Two important exceptions must, however, be noticed—namely, at Brighton and Bath, where attempts have been earnestly made to do justice to this large and beautiful family of plants. At Brighton classes have been devoted to groups of Ferns arranged for effect, and the results have been satisfactory in the extreme, instructive as showing what can be accomplished with Ferns alone, and affording a refreshing contrast with the bright masses of colour furnished by Pelargoniums and other flowering plants. Compared with the conventional groups at shows these are far superior when tastefully designed, not crowded, but allowing every distinct character of frondage and habit to be distinctly seen. Much, of course, depends upon the individual taste of the competitor and the Ferns at command, but diversity of style often compensates for a restricted collection of varieties, the banking method being avoided in all cases. The Bath Society at one of their summer shows a year or two since had a large tent exclusively occupied with Ferns, British varieties largely predominating, and the late celebrated pteridologist Colonel Jones was one of the chief exhibitors. In a large experience of shows throughout this country we have never seen a more interesting or pleasing tent of plants, and it was quite refreshing to turn from the grand floral display in other portions of the grounds to the coolness and varied shades of green in the Fern tent.

With regard to the commercial value of Ferns for decorative purposes, it might be safely stated that, though as collections representing the family Ferns are neglected in private gardens, yet never in the history of horticulture have they been so extensively employed for house adornment and in floral arrangements as at the present time. It would be difficult to estimate the number of Ferns sent into the markets in the course of a year, and impossible to give even a vague idea of the quantity of cut fronds of Adiantums and other Ferns, either sent from growers in this country or imported from the continent. Suffice it that some

"market men" devote themselves almost exclusively to Ferns, and there are several growers around the metropolis who derive a substantial income from the sale of these plants alone. Wherever cut flowers are a special feature in market nurseries Ferns are grown extensively as well, and a consignment of flowers for sale would be deemed incomplete without its accompanying proportion of Fern fronds. The extension of the cut flower business has induced a corresponding increase in the demand for suitable foliage, and the result has been that a great stimulus has been given to the culture of Ferns. Of course, few species are grown for this purpose, *Adiantum cuneatum* and its variety *gracillimum* largely predominating; but amongst the importations we have several others, and it might in some cases be worth the attention of market growers whether they could not add to their stock of varieties.

The Conference arrangements furnished subjects of considerable interest to students of Fern-life, and even some who have not paid special attention to the peculiar phenomena for which these plants are remarkable found the papers sufficiently interesting or novel to retain them in the Conference tent for nearly two hours. Mr. J. G. Baker, who was to have taken the chair, was prevented doing so, and Dr. M. T. Masters very ably performed the necessary duties. Professor Bower dealt exhaustively with the systematic relations of Ferns, but this admirable paper was a little too abstruse for the general public. Mr. E. J. Lowe contributed a valuable dissertation on Hybrid Ferns, in which he referred to the extraordinary experiments he has conducted, and illustrated the success which has attended his efforts by numbers of the fine specimens included in his group. Mr. C. T. Drury discoursed about "Plumose Ferns" in his usual lucid and interesting manner, and Mr. J. Birkenhead explained the culture of hardy Ferns in a practical and useful paper. Some discussion followed the various papers, but each lecturer had so fully and clearly treated the subjects entrusted to him that there was little room for questions. The business concluded with the customary votes of thanks to the Chairman and readers, and the Fern lovers present separated with the hope that an opportunity will be afforded another year for a similar Exhibition and Conference.

STRAWBERRIES—LEAVES VERSUS FRUIT.

ALTHOUGH much has been recently advanced in the pages of the *Journal of Horticulture* on Strawberry culture, I shall yet venture to offer a paper, the heading of which was down in my note book long before I read Mr. Wright's admirable contribution to Strawberry literature. What Mr. Bunyard has to say upon the same subject must also be treated with every respect, the writer having had great experience in all matters pertaining to fruit culture generally. At the same time I am sorry his remarks have appeared in our journal, for it is my belief they will serve to undo much of the good work that Mr. Wright had started, gardeners being somewhat apt to form hasty conclusions. Mr. Wright gives an instance of remarkable success attending the practice of manuring from the surface only, and his deductions in connection with this method of culture are undoubtedly sound, and altogether the paper ought to have proven most instructive to private gardeners. Then comes Mr. Bunyard's paper, in which he advocates digging or trenching in from 35 tons to 50 tons of manure to the acre, and this is a "floorer," at least it was thought to be such when I happened to be arguing with another gardener on the subject of manuring the ground for Strawberries. My friendly opponent after hearing what I had to say against a too free use of solid manure, quietly produced Mr. Bunyard's contribution to the Strawberry Conference, which at that time I had not read, and asked what I had to say in opposition to the experience of this expert. If I ventured to repeat all I had to urge against it as far as private gardeners are concerned, the Editor would, perhaps, think it necessary to "boil it down" considerably, but I shall endeavour to condense it somewhat.

In the first place private gardens, having been long in cultivation, are naturally richer in some forms of manure, though deficient in others—notably potash—this alone giving the plants a tendency to form far too much foliage. Added to this they are usually sheltered, often unduly so, this likewise favouring the production

of long stems and much foliage. What therefore may be sound practice in the open fields would perhaps be altogether wrong in a private garden, and of this not a few gardeners must have had ample proof this season. A superabundance of strong foliage usually results in comparatively light crops, and should the soil prove to be very loose as well as heavily manured the chances are there will be little or no fruit. Even if these overgrown plants do produce very heavy crops these are invariably late in ripening, and in bad or dull showery weather large quantities fail to ripen. Tons of fruit have spoilt on the ground in private gardens this season, but I can truthfully assert we have not had 4 lbs. of Strawberries spoilt from any cause other than what birds damaged. The reason for this is not far to seek. Our foliage is sturdy, and the clusters of fruit were thrown out well clear of it all round, and no difficulty whatever was experienced as far as ripening was concerned.

When I first commenced gardening in Essex, and in a district where Strawberries were very extensively grown for the markets, it was pointed out by a friend that not only were much heavier crops of fine fruit grown in the open fields than I should obtain in a sheltered highly cultivated garden, but it would also be found that the quality of the former was decidedly superior. Both assertions proved to be facts, and if private gardeners generally could pay a visit to the open fields while the Strawberries were at their best, a good deal of conceit would be taken out of them as it was out of me. A few years ago, it will be remembered, I argued strongly against injudicious trenching, and it was the experience gained among the market farmers that partly tended to confirm me in my prejudice in favour of firm ground for many crops. That Strawberries ought to have such there is no disputing, and it is very little manure that is needed at the outset. It is fruit, not leaves, we all ought to strive to grow, and the plants on solid and comparatively poor ground that are best calculated to give the most satisfactory results. First go the right way to promote the formation of abundance of strong trusses of bloom thrown up well above the foliage, then surface dress with special manure, or something in which potash abounds (we use wood ashes freely), and follow with a heavy mulch of strawy manure before a dry time may reasonably be anticipated. Autumn or winter mulching is a mistake, this doing more harm than good, nor should the surface be stirred with any tool other than a Dutch hoe.

A free use of manure and deep cultivation is recommended frequently for the twofold reason that ground thus treated is not so quickly affected by drought as that less expensively prepared, and it also keeps the plants in a profitable state very much longer. The question is, Which do we most often suffer from, drought or too much moisture? The latter assuredly, and this being so our method of culture ought to be adopted accordingly. Then as regards the longevity of the beds, I would ask, Why study this at all? In the majority of cases the plants rarely produce really good crops after the third year, and there is little sense in longer keeping them on the ground. We take no more pains here with Strawberries than with most other crops in the kitchen garden, and never hesitate to root them up when they have ceased to produce fine fruit in abundance. The ground intended for them is first well prepared but not trenched for early Potatoes, and these are lifted, the ground cleared of rubbish, levelled and trampled in time to plant Strawberries about the first week in August. If strong plants are put out, and these do well, a good early crop is taken from them during the first season, but if from any cause they are weakly then we pinch off the bloom, and by so doing save nets, and secure fine strong plants for the following season. Not unfrequently Tripoli Onions or salading of some kind is grown between the rows of Strawberries, and directly the latter have ripened off their last crop and yielded what runners are needed they are cut off with a spade, the ground cleared but not dug, and at once cropped with either Broccoli or Savoys. Ours is in a retentive clayey soil, but, as Mr. Wright has shown, exactly the opposite kind of root run, treated very similarly, answers surprisingly well. In order to further demonstrate what poor solid ground will do, I will briefly state our experience this season with the much despised Alice Maud, but which under field culture is yet one of the best that can be grown. In the autumn of 1888 I received sufficient runners to form two rows 26 yards long, and they were dibbled out on undug ground previously occupied by Spinach. Last year they were not allowed to fruit, this year they were, and I rather think proved eye-openers for some that saw them and knew the old variety. Every plant was completely surrounded by fruit, the largest of these weighing from 1 oz. to 1½ oz., the colour being a bright red, and the quality excellent. After we had gathered from these rows about six times I weighed all that were ripe on one of the plants carrying a fair average crop. There were twenty fruits weighing 15 ozs., and a fair average for the lot would

be $1\frac{1}{4}$ lb. Nothing very remarkable about this weight it may be urged, but it all ripened, and what is of great importance, the crop cost next to nothing to produce.

There is yet one more point to be considered. As stated by Mr. Bunyard, the rows of Strawberries in the open fields may be about 32 inches apart, 16 inches dividing the plants in the rows. These distances answer well, though in the case of such sturdy growers as Alice Maud 2 feet between the rows is sufficient. Private gardeners often give less room than Mr. Bunyard recommends, whereas they ought really to give much more. Our plants that are to fruit one year only are put out 15 inches apart each way. Those that are to remain longer on the ground naturally require more space. Sir J. Paxton being a strong grower is planted in rows 30 inches apart, and 2 feet apart in the rows, all the rest being put out about 2 feet apart each way. According to my experience it is a wiser plan to give the clumps good room all round than to plant more thickly in the rows; but if private gardeners think this a wrong notion they will yet do well to arrange the rows nearer 3 feet than 2 feet apart, the former distance being none too much on deeply dug heavily manured ground. In conclusion, I would also add that it is the deeply cultivated loose rich ground that is most infested with slugs. This season there were fewer of the latter among our Strawberries than I ever remember seeing before, especially in a showery season.—W. JGGULDEN.

GNATS AND MOSQUITOS.

THE real (or supposed) occurrence of mosquitos in Britain has been the subject of many a newspaper paragraph, and, like the big Gooseberry that has furnished one of our standard jokes, after occasional intervals the irrepressible insect is sure to turn up again, a theme of vexation or complaint. Reference has been made recently in these columns to an alleged abundance of the vicious flies at the West of London, and to a ridiculous notion that their appearance was explainable by the fact that they were imported to the locality with exotic plants by some nurserymen of Chelsea. On personal inquiry at the leading establishments, conducted by such men as Messrs. Bull, Veitch, and Wimsett, who of course do receive quantities of new and choice plants, I found, as might be expected, that the idea cannot be supported by the smallest fragment of fact. Obviously had the mosquitos been introduced with the plants the first to suffer from the attacks of the insects would be those who were working at the nurseries. No instances of the kind existed, and I do not believe there is any authentic case of insects noxious to human beings having been introduced to Britain by means of foreign plants imported, or at least only stragglers. As to the mosquito, all the specimens ever shown me, on the supposition that they belonged to that species, turned out to be the ordinary English gnat. If stray examples of the fly reach some of our ports, which may sometimes happen, I do not think they breed here; it is a possible thing, but very unlikely. The importation of the insect in the egg state is not more probable, because the eggs of such flies hatch speedily. At the same time, it must be acknowledged that the common gnat of our island has been exceptionally abundant this season, and its bite, from some cause or another, unusually virulent. Many women and children have been victims since March or April (for there seems to be a succession of them), not only when out taking country walks, but also when strolling or working in their own gardens. Our rougher skinned sex is less frequently attacked by them. It is all the worse that the gnats should make females their mark specially, for those that sting or bite us are of that sex; entomologists are almost agreed that the male gnat is harmless. No doubt a little watchfulness might often prevent persons from being stung when they happen to be in a place where gnats are flying about. Still this female foe is crafty; she alights gently upon the skin, inflicts the bite speedily, and it is not at first, as a rule, followed by either pain or irritation. Then, too, the insect enters bedrooms, and while people sleep attacks the face or the hands and arms if exposed, retreating unnoticed. One thing, however, is noticeable both in and out of doors, the onslaught of this vicious insect is mostly preceded by the sound of its shrill clarion, a warning to which we should attend. Some naturalist gave the species the name of *Culex pipiens*, but its trumpet note is certainly not adequately represented by the Latin "*pipiens*," and when the diminutive size of the insect is considered the volume of sound one can produce is surprising. It is the result of rapid vibrations of the wings, which the gnat is enabled to make by the powerful muscles lodged in the thorax. Mr. Staveley found on soaking this in turpentine, and then examining it by polarised light, that it is almost entirely muscle, bands of these crossing and recrossing each other, giving the insect the appearance of being garbed in check or turban. Owing to their strength of muscle gnats are able to perform the

feat of hovering or remaining seemingly motionless in the air, and also of keeping themselves suspended with their heads against the wind.

What we call the gnat's bite partakes of the nature of a bite and a sting, for the needle-like weapon which is thrust into the skin of the victim contains several minute lancets, which pierce the vein selected, and it then pumps the blood up the tube till satiated or driven off. Dissection has not yet revealed this object, but it is almost certain the gnat's weapon must be connected with a poison bag, a liquid being thrown into the incision to thin the blood and facilitate its flow up the tube. This must be very potent from the effects often observable when a bite happens to be inflicted in some fleshy part, such as the cheek or arm; a swelling as large as a hen's egg will sometimes rise up in the course of a few hours, attended by intense itching, and with some persons this is accompanied by feverish symptoms. After a variable period the swelling subsides, but the centre immediately round the bite hardens into a sort of core. With some people this breaks and discharges; usually it slowly disperses. I have seen the marks of gnat-bites remaining for a month. It may be well to indicate the best method of dealing with them. In the first instance there is nothing better than bathing the part freely, and if this can be done immediately the bite is perceived, the poison may be so far diluted that any after swelling is prevented, but it must be very thorough and prompt to avert this. Subsequently emollient applications may be used, such as olive oil, vaseline, or a lotion of arnica has been advised.

Now, as large numbers of gnats are yearly bred in and near gardens, the aquatic larvæ having their home in some pond, tank, or butt, which serves as a receptacle for rain-water, they should be looked after while passing through this unwinged condition, when some of them may be killed. Curious, long-bodied, flexible creatures are these gnat larvæ, with a circular moveable apparatus at the tail, by means of which they draw in air occasionally as they rise to the surface. Watching our opportunity we may skim off scores of them in the act of breathing, though they will descend speedily if they have the chance. Then again, many may be destroyed at the period they are emerging in the winged state, their extrication from the pupa or chrysalis being a matter of peril, because they may easily be drowned in coming out of the water. They manage to poise themselves till the wings are dry, lifting up their legs and using the empty case as a sort of boat, it is easy then to plunge them under before they fly off. Also the parent gnat forms her eggs into a boat-like mass as she deposits them on the water; these, though small, may be detected and removed. Some of the smaller gnats or midges are said to attack us sometimes when the weather is hot.

I should add that many supposed gnat-bites are really the effect of the insidious operations of the harvest bug, which, though called *Tetranychus autumnalis*, occurs also in the early summer, particularly amongst rows of Peas and Beans, and amongst Currants, Raspberries, &c. This bug or mite, which is akin to the detestable itch insect, transfers itself from the vegetables or shrubs to human beings who may happen to be near, and with rapid dexterity it buries itself under the skin. The irritation is very great, accompanied generally, but not always, by swelling, as with the gnat's bite. Of course the harvest bug attacks people in all parts of the body, and not merely in exposed places. It may be killed by the insertion of a fine needle, or the free rubbing in of sulphur ointment.—ENTOMOLOGIST.

SHY-BEARING VINES: HOW TO MAKE THEM FRUITFUL.

I ENCLOSE a paper on the above subject, read by Mr. Parker of the Tyneville Vineries at the first regular monthly meeting of the Society of Jersey Gardeners. This Society has recently been formed, and its objects are the same as those of the numerous Gardeners' Mutual Improvement Associations in the mother country—England. Already about two dozen of the principal gardeners of the island have joined the Society, although there has been but one meeting. Mr. H. Elliott, F.R.H.S., has been elected Chairman of the Society.—WM. SHAVE, *Hon. Sec.*

THIS subject is full of interest and also of great importance to gardeners in general, and Jersey gardeners in particular. Here in Jersey in many instances the one object is to grow good Grapes and plenty of them, but notwithstanding that every attention is given to the Vines during the growing season we often meet with cases in which the crop of fruit is far from what it ought to be when the vigour of the Vines is taken into consideration. I have seen Vines that at pruning time have looked likely to bear a fine crop of Grapes the following season, and they undoubtedly would

have done so if they had been pruned in the right way, but the fact is in nine cases out of every ten all Vines are pruned alike whether they need it or not, and the result is a light crop of fruit year after year from Vines that are capable of bearing a full crop of Grapes, and the Vines are condemned as shy bearers; the gardener gets the order to go whether he deserves it or not. I may remark that the gardener often has not a fair chance of acquiring a knowledge of the Vines under his charge, for if he does not produce a fine crop of fruit during his first season in his situation it is seldom that he has the opportunity of trying what he can do another year. It is a well known fact that the more a man has to do with a set of Vines the better he is able to manage them. It is equally well known that when there is frequent change in the management of Vines the results are always unsatisfactory, and often disastrous. I know quite well that some varieties of Vines are considered shy bearers even by the best Grape growers, but I doubt very much if all things are conducive to good Grape growing, if any of them are such, provided they are properly treated when pruned, and otherwise well attended to. I do not wish to convey the impression that the proper pruning of Vines counts for everything in producing fine crops of fruit. When Vines have by long neglect and frequent changes in their management relapsed into a bad state, it requires something more than judicious pruning to render them fruitful again. I have had to grow Grapes under the greatest difficulties. At the same time I have had the best of opportunities of informing myself on the question of shy-bearing Vines, and the conclusions that I have arrived at are these, that if Vines make good wood each year they make good leaves, and if they make good leaves they make good buds, and having made good buds it is simply a question of proper pruning to induce them to show a good crop of fruit. My object, therefore, is to give my experience of the various ways of pruning Vines in order to make them fruitful.

Most varieties of Vines fruit freely when closely spur-pruned, provided their roots are in good borders, not too deep; but there are exceptions to this rule. Even that grand old free-bearing variety Black Hamburgh when grown on the single-rod system will often fail to show a good crop of fruit when its roots are deep in the ground, though it seldom fails to fruit freely when grown on the extension system, no matter how deep its roots may be. There are other sorts that seldom fruit freely when closely spur-pruned, no matter how well they are otherwise attended to.

It will not be necessary for me to give a list of all the varieties that require special treatment at pruning time. Three examples will suffice. I will first draw attention to that well known and truly grand-looking Grape when well grown, Gros Guillaume, which is perhaps better known by many gardeners under the name of Barbarossa. This variety seldom fruits well when grown on the single rod and close spur-pruned, except when planted in an inside border not too deep. Even then the back buds often fail to show fruit in seasons following a close wet summer; therefore in order to be sure of a crop of fruit from this Vine short spur-pruning should not be relied on except in exceptional cases, but long spur-pruning should be resorted to, or, what is better still, fruit on the short rod system. The short rod system of fruiting the Vine is not so well understood or practised as it ought to be with some Vines; if it were we should hear much less about shy-bearing Vines than we do at the present time. I will describe the three ways of pruning above mentioned. In pruning on the short-spur system proper the side shoots or branches of the previous season's growth are at the time of pruning cut hard back to the last plump bud, not more than half an inch of wood being left each year. In adopting this style of pruning all Vines have a much neater appearance when dormant and at rest than when any other style of pruning is adopted; but neatness when dormant counts for very little if there is not a crop of Grapes at the right time, and in the right place too, the right place being on our own Vines.

In pruning on the long-spur system the practice is to leave three or four buds on each spur each season. Some growers, however, modify this somewhat by leaving three or four buds on half the spurs, and pruning the other half to the last plump bud; but even then this variety will sometimes fail to show a single bunch of fruit on some of the Vines, and even if it fruited well by being thus pruned the great drawback to the system is that in a few years' time the spurs get so long that they are almost unmanageable; therefore I think the short-rod system of pruning and fruiting this Vine is far preferable, as it seldom fails to fruit well when thus treated, provided that other things are conducive to good Grape growing.

The short-rod system of pruning the Vine differs from the two preceding ones materially, and at the same time I may say that it is the most certain way of securing a crop of Grapes from Vines that are at all doubtful bearers. When a Vine is taken in hand to prune on the short-rod system part of the laterals are cut off

close to the back bud in the same way as is done in short-spur pruning, but from three to five, according to the length of the main rod, of the best placed and strongest lateral shoots are left their full length, or nearly so, and are then tied to the main rod to produce the crop of fruit the following season. It is seldom that these one-year-old short rods fail to show a full crop of fruit even on Vines that are noted shy bearers, and very often they afford very fine bunches. In fact, if I was intent on producing large bunches of Grapes for exhibition, I should resort to this way of pruning even if the Vines that I had to work on were the freest bearers. When the short rods have fruited one season they are pruned hard back to the last bud nearest to the main rod, and a fresh lot are retained that have been grown from the buds that were pruned close in. When treated in this way Gros Guillaume, Golden Champion, Gros Maroc, and other noted shy-bearing Vines seldom fail to produce a fine crop of Grapes if otherwise well looked after.

When old Vines are in deep rich ground, such as we have in many parts of Jersey, they often, if at all neglected in watering in dry weather, extend their roots very deep in the subsoil. When such is the case, though they make fine leaves and good wood each year, they seldom produce fine crops of fruit if they are spur-pruned. In such cases I have generally found the long rod system by far the best for producing fine crops of fruit. It is, moreover, so simple that anyone who has any knowledge of Grape growing may adopt it. When this system is practised young canes are grown between the fruiting rods each year the full length of the rafters, and fruited the following year their full length. Many young gardeners of the present day will be disposed to think that young rods left so long would fail to break many of their buds, but such is not the case as a rule. I will give two examples from amongst many. When I took charge of the gardens at La Hougue Boîte the old Vines, through long neglect, were in as bad a state as they well could be, so I decided to get what I could off them the first year, and renew them on the long rod system. Having grown a young cane from each Vine the full length of the rafters, at pruning time I decided to leave three of them their full length, 20 feet, and prune the rest half way up the rafters. The three that were left full length broke all their buds but one, and produced 75 lbs. of good Grapes; in fact, they were the best fruit in the house. On taking charge of the vineries here I adopted the same plan as far as I could in one house to fill up some gaps, with quite as good results, other things being considered. One of the young rods grown last season, though only 17 feet long, showed this year sixty-three bunches, fifteen of which were left, and they were by far the best fruit in the house. In conclusion I may say that when young rods are run up from old Vines, if they are strong and well ripened, they will break their buds just as well as old ones the full length of the rafters, and also carry a full crop of fruit their entire length.



CALANTHES.

OF all midwinter flowering plants the Calanthes are my favourites. They may be grown during the summer in a greenhouse or cool house, but they cannot be flowered there, and unless a temperature of from 65° to 70° can be given them at the time they are producing their flower spikes they had better not be grown, as, no matter how fine the summer grown pseudo-bulbs may be, they will not flower satisfactorily in a low temperature. I proved that conclusively years ago, and at one time I was obliged to discontinue their culture for the want of heat; but that has been remedied, and they are as pleasing as ever. We need not go to extremes in culture to induce every pseudo-bulb to produce from two to four spikes from 2½ to 4 feet in length. All are charming, and for decoration, cut and uncut, they are absolutely unequalled in November, December, and the greater part of January. It takes the spikes a considerable time to open the flowers right up to the point, but the lower ones remain fresh long after the top ones are expanded, and if the plants are kept quite dry at the roots and in a dry atmosphere they will remain perfect longer than any other winter flower with which I am acquainted. They are fit associates for the best of Orchids, but they are much easier cultivated and flower with far more certainty than the majority of Orchids, and many who have neither the skill nor accommodation for them would succeed with Calanthes.

The soil should be kept moderately dry at the time the flower spikes begin to develop, and by the time these are half grown water must be entirely withheld from the roots. This will cause all the foliage to fall off, but that does not matter; indeed, it is the right process, and from then onwards no more water should be given to the roots. Sometimes when some of our pseudo-bulbs chanced to become wet from a drip from the roof after the foliage was gone the spikes have not developed so well as the totally dry ones. As soon as the flowers are over, which may be in January, the plant must be kept dry still, either by laying the pots down on their side in a dry place or shaking the plant from the soil altogether. In both cases keep the pseudo-bulbs in a temperature from 50° to 60°, but towards the end of February or early in March attend to them for another year.

I have then tried various ways, but will only state the plan that answers best. This was to place a layer of sphagnum moss in the bottom of a cutting box, place the pseudo-bulbs upright and about 2 inches apart from each other on the top of this, and then pack more moss firmly between them, but not more than half-way up the pseudo-bulb. They are then slightly watered and placed in a temperature of about 70°. The moss is merely kept moist, not saturated. In a short time the roots are emitted, and they soon push into the moss. The young growths which spring from the base soon appear after this, and when these are about 3 inches high the plants are taken from the moss and potted. I have tried them in 3-inch pots, and then transferred when ready to 6-inch or 7-inch pots. I have also potted them from the moss into the latter size, and of the two ways I prefer the last-named. One good pseudo-bulb is sufficient for a 6-inch pot, but a number may be placed into an 8-inch or 9-inch pot if desired, one-quarter filled with drainage. The potting material should consist of peat, loam, and charcoal, with a little horse droppings, the small material sifted and removed from this as much as possible, as the fleshy roots delight to penetrate a rough mixture. They will not thrive in a close, adhesive soil, and this accounts for many cases of failure amongst *Calanthes*. The material should be pressed firmly into the pots, and the pseudo-bulb must not be deeper than is sufficient to keep it quite firm. After potting, place them where the temperature is from 65° to 70°, and do not give any water until the roots are penetrating the soil. This is one of the main secrets in securing a free and luxuriant first growth. I have known fine promising bulbs to be ruined by being watered too soon after potting. They may, however, be slightly syringed, but not sufficiently to saturate the soil. When once growth has begun freely they will be benefited by the most copious supplies of water, and in July, August, and September liquid manure may be given them twice weekly with advantage. They will succeed in any warm pit in summer, and they should not be heavily shaded at any time.—J. M.

CYPRIPEDIUM GERMINYANUM.

A HYBRID between *C. hirsutissimum* and *C. villosum*, very distinct amongst the numerous hybrid *Cypripediums* raised during recent years. The flowers are of good and excellent shape, the petals somewhat resembling *C. hirsutissimum* in colouring; the dorsal sepal is, however, green, with bold deep brownish stripes. The lip is like that of *C. villosum* in colour. The plant was shown by Mr. H. M. Pollett and Messrs. J. Veitch & Sons at the meeting of the Royal Horticultural Society on January 11th, when certificates were awarded by the Orchid Committee.

OUTDOOR FIGS.

"THE fresh fruit of the Fig is very agreeable," states Dr. Hogg in his "Vegetable Kingdom," page 676, "and many varieties are cultivated in this country for that purpose. In some parts of the coast of Sussex they grow freely and bear abundant crops as standards in the open air, but they are generally grown against walls and in fruit houses." We find this tree is about as generally grown as Vines, or rather Grapes, against walls in this country. There is mostly a tree or two in gardens against walls, showing what they are capable of in leaf production, but the fruit is not given to many to eat through the scantiness or uncertainty of its crops.

There seems something wrong in our management of the Fig. Grow it does splendidly, but it seems not to produce its fruit in nine seasons of ten in a full and satisfactory crop. True there are instances of its succeeding with little or no attention, whilst in others it makes a grand display of leaves and somewhat profuse array of fruit that do not remain long enough to become fleshy. Indeed many that have or had Fig trees are little acquainted with its fruit in a fresh state as "a wholesome and agreeable" one, not to mention the nutritive value, which from forming "great part of the food of certain peoples of Africa, and even the peasantry of some parts of Italy and Spain," must be considerable. This paucity of a most desirable fruit in a generality of desserts is much to be regretted, as pectoral ailments are a peculiarity of the British climate, especially of the feeble sex, and demulcent as well as emollient properties give this fruit a peculiar fitness as a dietary in



FIG. 12.—CYPRIPEDIUM GERMINYANUM.

highly civilised communities. Apart from these considerations dishes of Figs, fresh, ripe, and bursting their skins with lusciousness, are most welcome, if for nothing less than affording variety at dessert. As they, however, are generally grown, this seems extremely uncertain of accomplishment for taking the trees, as they obtain not as many dishes of fruit (and it only takes six fruits of the larger kinds to make a full sized one) are forthcoming in a season as trees. This is mostly attributed to the climate, which seems to be invariably at fault whenever an excuse has to be made or a difficulty arises in giving a satisfactory explanation of crop failures. Climate is no doubt an important factor—indeed the first consideration in the cultivation of exotic fruits, particularly those from "sunnier climes," but it is not everything, and it is difficult to account for a tree proving sterile in one soil whilst fruitful in another.

The Fig is a fruit of undeniable wholesomeness. Ripe fresh Figs are always dear, and that is admittance of appreciation as well as a proof of scarcity. This must arise from cost or difficulty of production but in what particular respect is conjectural, as with a fair amount of means and care in culture the Fig can be produced as certainly and as profitably as any other fruit. The Fig as a hardy fruit may never become so popular and common as Apples, but there is no reason why it should not be available in a fresh state. We read that it is a native of the East—the oldest historical tree—and so conclude it is tender, much tenderer than it really is, and not only that, but set to cultivating it on preconceived notions of its roasting heat requirements and unsuitability consequently to our dull, cold, moisture-laden, murky climate. It

is not hardy, that everybody knows, as the first severe winter cuts it off the ground. This is a great drawback where it happens, one it is well to know. Protection must be given in most places for its growths in winter, in order to safety and a crop of Figs, those forgetting to come all the same in a majority of seasons in anything like remunerative quantity of the space occupied and labour entailed. There are, however, examples to the contrary. In some places Figs will grow and fruit satisfactorily without any trouble. This is rare. I have not seen a Fig tree growing luxuriantly and fruitful at the same time. This is equally true of those grown under glass as outside; indeed, I have never seen a Fig tree in the rich soil of gardens that was other than a waste of soil and space, particularly where the roots had breadth and depth of soil practically unlimited to roam in, the branches being as carefully restricted as the roots had liberty. In paved yards, as in loose fruit borders, they may be seen growing luxuriantly only to cast the incipient fruit untimely; in fact, Figs seem to produce fruit only where its order the Nettles usually do—viz., near dwellings, and in banks in which nitrates form most abundantly. These seem essential to its health, yet vigour of growth does not always culminate in fruit, but generally the reverse. Still, these nitrates appear an essential of its existence, for when grown in pots the trees become enfeebled after the nitrates formed in compost heaps and used for potting are abstracted, but in fresh turf and a decomposing bed of leaves they are sustained in healthy fruitful vigour. Figs are most fruitful when they grow stoutly, and are influenced in fertility by the soluble silica or lime in the soil. The former appears in some soils to supply plants with a substitute for lime and *vice versâ*, but apart from this Figs attain their highest degree of fruitfulness in soil of a calcareous nature. These, however, are not silicious, yet it obtains in large proportions in the disintegrated surface layer or deposit of soil over limestone and chalk. I do not know the formation on which the Fig thrives as a standard in Sussex, but wherever I have seen the Fig thriving and fruiting satisfactorily, as well as being hardy, it has been near buildings, and always where the *débris* of an old building had entered into the composition or been used as drainage, and so forming a stratum of silicious and calcareous matter. These (old mortar rubbish) form nitrate of lime when exposed to the air, and there is reason to know that bacteria form nitrate out of lime in the soil, so that this substance is obtained in one way or other by the Fig, either when planted against a wall, or more properly at the foot of a building, and in such positions the Fig always is fruitful when not subject to hard pruning, so as to cause it to make sappy growth. Limestone exerts a powerful influence on both the hardiness and fruitfulness of the Fig. In loose open rich soil, as well as in cold and wet clays, it is tender; in calcareous soils it grows harder, more firm in the wood, stouter, shorter jointed, with smaller but more leathery leaves and fruits at every joint. Marl seems to suit it well, which contains most soluble silica of any soil, and oxides of iron and alumina also, along with good percentages of phosphoric and sulphuric acids. The climatic conditions must, of course, be favourable, still soil conditions enable a plant to contend with disadvantages of climate in a remarkable degree, and in none more than the Fig. Its capriciousness in fruiting is due in a great measure to planting in soil too rich and deep, and in its not being of uniform or little fluctuating in moisture as obtains with the limestone and chalk formations, which naturally well drained are highly retentive of moisture.

What I simply wished to relate was the fruiting of the Fig as a bush or standard with no more shelter than that of a low wall, which is much overtopped in Hertfordshire. The cases that have come under my notice are only three, but there are no doubt many others in which the Fig would thrive as a standard or bush with no more protection than that of walls, such as obtains in this case in St. Albans by the low ones dividing the grounds of villa and other residences. In one instance the trees have not failed to ripen a full crop for twenty-seven years, and are scarcely pruned at all, merely having the old wood cut out, and irregular growths shortened.—G. ABBEY.

FRUIT AT DRAYCOT MANOR.

ONCE during the summer I make an effort to visit my old friend, the gardener at Draycot, Chippenham, in each year to see his Grapes, which have been previously referred to in the *Journal of Horticulture*. Not because of the extent of the space given up to Vines am I interested, but rather in the unorthodox system of culture practised. When previously noted in these pages, it came under the heading of "Narrow Vine Borders," and at the time stimulated several correspondents to give their opinion and experience in the matter. The first border provided was only of small size—namely, 2 feet in width, and about 12 inches deep,

this carrying them over the second year. In the third year 2 feet more soil in width was added in about the same depth, drainage provided took the form of a few broken bricks in a thin layer. Soil space is still further augmented this year in about the same or less proportion.

That the provision made is satisfying to the Vines is demonstrated by their health and vigour, and the perfect finish of the Grapes, which are fitted for competition in first class company, where they figured conspicuously in some few exhibitions last year. This year's results are even more gratifying than any previous, the bunches being larger as well as berries, and the colour superb, both Black Hamburgs and Madresfield Court, with which the house is mostly occupied. A Vine of Gros Colman has medium-sized bunches, the berries promising to swell to an unusually large size. Another of the seldom seen Strawberry Grape is peculiar on account of the scent which pervades the air of the house, particularly in early morning. This has a place only by request, as it is not profitable, bunches or berries never extending beyond medium size. Mr. Gibson is an advocate of free and abundant ventilation as recently advanced by Mr. Iggulden, and this, too, earlier than is adopted by many growers, and there is no doubt but that these conditions contribute very greatly to perfect colouring as well as preventing splitting, so common with Madresfield. Not a single berry has cracked with this sort here, although it has the same amount of water as the rest, and from the moderate depth of soil it is readily understood that it is required often, or given about once a week.

Manure only in liquid form is applied, and in weak doses, a tank connected with the garden closet being drawn upon for the purpose, and no mulching is used. Although disagreeable in use there can be no doubt in the highly fertilising powers of this application, but it requires to be used cautiously. Muscats, Lady Downe's, Alnwick Seedling, and Alicante fill another house; the Alnwick, growing in a large pot, carries three perfectly set and useful bunches. Muscat of Alexandria has a rather heavy crop of nicely furnished bunches, and Lady Downe's above the average in every way.

A large house formerly used as a stove is just being completed in arrangement for Vine growing to meet the increased demand for Grapes. The permanent rods are intended to be grown under the same rules as carried out so successfully in the adjoining house; supernumerary canes are to be planted at once in a central brick pit that will be allowed to fruit at once. These are now growing in pots, and the early August planting of these will insure their partial establishment before winter arrives and the leaves fall.

The outdoor Strawberry crop has been exceedingly good, several hundredweights being disposed of beyond the home supply. King of the Earlies, Noble, and The Captain are among the varieties grown, and though much cannot be said for the quality of Princess Frederic William, it is still retained for supplying an early dish, this being two or three days earlier than Noble. Loxford Hall is a considerable favourite, fruits on yearling plants assuming enormous proportions and first-rate quality, and being firm-fleshed is a good traveller. It is the neatest grower I have seen, requiring less room than most sorts in planting. Mr. Gibson intends his future plantations of this variety to be not more than a foot apart each way. Young plants are earlier in fruiting than older ones, and when two years or three year old they are among the best for late use. The plants I saw only a few days since were in full bearing. Red Currants and Gooseberries on walls were laden with unusually large sized clusters and berries, the former mostly of the Cherry, Grape, and Raby Castle kinds; the latter of the Red Warrington. Carter's Champion and Baldwin are the only kinds of Black Currants grown; these, unlike the old variety, do not shed their fruit directly they are ripe. The Baldwin is a most distinct grower, the leaves being much larger and pale green coloured, the berries growing very large in size. Baumforth Seedling is the favourite Raspberry, and is superior in flavour to Carter's Prolific, bearing berries quite as large if not larger, though unlike it requires staking, which is the economic feature of Carter's Prolific. Plums are a light or medium crop, also Peaches; of these latter a tree, probably Early Beatrice, ripened its first fruit the 7th of July, which clearly indicates the warm nature of the soil and surroundings. The soil is of a light sandy loam on gravel subsoil, and wall trees require watering often during sunny weather, or flagging ensues. The garden is in the highest state of fertility from the abundant applications of manure, both solid and liquid. Apple crops are very fair, but Pears somewhat thin; but this deficiency will be made up perhaps in the size of the fruits.

Tomatoes under glass are disease-stricken, and those in the open do not grow and fruit as in former years from the inclement nature of the season. This latter element, too, has proved a fertile cause for insect pests, attacks which with many fruit crops has been very troublesome and abundant. One item I have omitted in

the preparation of Strawberry runners. Instead of layering in pots or turves they are secured as early as possible, and dibbled into a prepared compost in the open on a hard bottom. They are never shaded, but watered freely and frequently, and this induces a sturdy growth, and they are easily transferred to their permanent positions either in the open or pots, and are then not in the way of, or trampled on by fruit pickers.—VISITOR.

POPULAR FERNS.

THE gold medal group of Ferns shown by Messrs. J. Veitch & Sons, Chelsea, possessed remarkable interest, not only for the number represented, but for the distinct and elegant characters possessed by the majority. A considerable proportion of those shown have been introduced by the firm, and the following list includes the Ferns obtained direct from their own collectors, raised or placed in commerce from 1862 to 1890 :—

	SENT OUT IN
<i>Aerophorus affinis</i> ...	1862
<i>Aerostichum aureum</i> ...	1866
<i>Adiantum æmulum</i> ...	1878
„ <i>amabile</i>	1873
„ <i>Collisi</i>	1885
„ <i>Colpodes</i>	1865
„ <i>concinnum latum</i> ...	1868
„ <i>cuneatum deflexum</i> ...	1884
„ <i>grandiceps</i>	1882
„ <i>chilense</i>	1862
„ <i>farleyense</i>	1870
„ <i>Fergusoni</i>	1887
„ <i>fissum</i>	1882
„ <i>Henslowianum</i>	1874
„ <i>Luddemannianum</i> ...	1877
„ <i>monochlamys</i>	1886
„ <i>palmatum</i>	1877
„ <i>peruvianum</i>	1873
„ <i>princeps</i>	1876
„ <i>rhodophyllum</i>	1884
„ <i>rubellum</i>	1870
„ <i>Seemanni</i>	1875
„ <i>seabrum</i>	1862
„ <i>speciosum</i>	1875
„ <i>sulphureum</i>	1862
„ <i>Veitchi</i>	1871
„ <i>Weigandi</i>	1885
<i>Asplenium ferulaeum</i> ...	1882
„ <i>laxum pumilum</i>	1876
„ <i>longissimum</i>	1873
„ <i>pterioides</i>	1886
„ <i>Schidozon</i>	1874
<i>Ceterach aureum</i>	1873
<i>Davallia alpina</i>	1869
„ <i>elegans polydaetyla</i> ...	1882
„ <i>fijiensis major</i>	1882
„ <i>hemipetra</i>	1869
„ <i>Mariesi</i>	1880
„ <i>eristata</i>	1883
„ <i>Mooreana</i>	1870
„ <i>parvula</i>	1869
„ <i>retusa</i>	1886
<i>Davallia tenuifolia Veitchiana</i> ...	1885
„ <i>Tyermanni</i>	1873
<i>Dennstaedtia davallioides Youngi</i> ...	1877
<i>Dieksonia Berteroana</i>	1880
<i>Doodia aspera multifida</i>	1879
<i>Gymnogramma decomposita</i>	1874
„ <i>Muelleri</i>	1877
„ <i>Pearcei</i>	1866
„ <i>robusta</i>	1888
„ <i>schizophylla</i>	1881
<i>Hymenophyllum Forsterianum</i>	1882
<i>Lastrea aristata variegata</i>	1880
„ <i>erythrosora</i>	1862
„ <i>opaea</i>	1862
„ <i>prolifera</i>	1883
„ <i>Richardsi multifida</i>	1881
„ <i>tenericaulis eristata</i>	1888
„ <i>Standishi</i>	1865
<i>Lomaria ciliata</i>	1870
„ <i>erenuata</i>	1862
„ <i>discolor bipinnatifida</i>	1873
„ <i>gibba</i>	1864
„ <i>gibba platyptera</i>	1887
<i>Mierolepis hirta eristata</i>	1878
„ <i>strigosa</i>	1862
<i>Nephrolepis Bausei</i>	1885
„ <i>davallioides fureans</i>	1876
„ <i>Duffii</i>	1878
„ <i>philippinensis</i>	1877
„ <i>pluma</i>	1879

	SENT OUT IN
<i>Nephrolepis rufescens tripinnatifida</i> ...	1887
<i>Osmunda japonica coymbifera</i>	1883
„ <i>javanica</i>	1884
„ <i>palustris</i>	1877
<i>Platyneerium aleiorne majus</i>	1873
„ <i>Hilli</i>	1884
„ <i>Willineki</i>	1876
<i>Platyloma brachypterum</i>	1873
<i>Pleopeltis fossa</i>	1883
<i>Polystichum tripterum</i>	1881
„ <i>setosum</i>	1862
„ <i>Tsus-simense</i>	1883
<i>Pteris Bausei</i>	1886
„ <i>argyræa</i>	1862
„ <i>ensifolia variegata</i>	1877
„ <i>moluccana</i>	1881
„ <i>tremula foliosa</i>	1887
<i>Rhipidopteris peltata gracillima</i>	1879
<i>Todea Fraseri</i>	1864
„ <i>grandipinnula</i>	1887
„ <i>plumosa</i>	1879
„ <i>superba</i>	1864
„ <i>Wilkesiana</i>	1872
<i>Trichomanes parvulum</i>	1883
<i>Woodsia polystichoides Veitchi</i>	1862
<i>Woodwardia orientalis</i>	1862
<i>Selaginella Poulteri</i>	1868
„ <i>grandis</i>	1883
„ <i>gracilis</i>	1886
„ <i>japonica (involvens)</i> ... ..	...

ROYAL HORTICULTURAL SOCIETY.

JULY 22ND.

SCIENTIFIC COMMITTEE.—Present: Mr. Morris (in the chair), Professor Church, Professor H. Marshall Ward, Mr. Paseoe, Mr. Blandford, Dr. Müller, Dr. Masters, Rev. G. Henslow (Hon. Sec.), and Mr. F. R. Williams (visitor).

Oak-staves, Perforated.—Mr. Blandford has made an exhaustive report on the wood perforated by *Trypodendron Quercus*, *Eichhoff*, brought to the last meeting, which will be published in the "Kew Bulletin." It appears that the cylindrical holes run transversely through the wood, having ramifying galleries at right angles; several of the tubes were empty, others filled with debris, which might be easily ejected by the beer. He discovered one hole which had been artificially plugged, as well as others hidden by the iron bands, conclusively proving that the beetles (several specimens of which were found) must have been in the wood before it was made into casks. Mr. Morris added that he had received an independent corroboration from the officers of the Indian Store Department that the wood was unsound previous to being used for casks. A vote of thanks for his investigations was given to Mr. Blandford.

Carnations Attacked by Tipula.—Mr. Blandford confirmed his suspicion that it was a species of *Tipula* which has ruined so many Carnations during the present season.

Nest of Weaver Bird from Paraguay.—Prof. H. Marshall Ward exhibited a nest made of the mycelium of some fungus. It was in the sclerotoid condition formerly known as rhizomorpha. Mr. Morris observed that the Banana birds of Jamaica made a similar use of rhizomorpha. It is peculiar in being arboreal, and is found under the bark. It is common in the territories of the Argentine Republic.

Rhizomorpha of Agaricus melleus.—Mr. Morris exhibited a specimen of this mycelium received from Mr. F. C. Fennell of Westgate, Wakefield. It was found at a depth of 70 yards in a coal mine. It appears to be particularly destructive to props and timber made of the Spruce Fir, but not to the Larch, this proving to be the best for subterranean supports, though more expensive.

Cherry-Laurel Fruits Poisonous to Peafowl.—Mr. Morris recorded the fact that some peafowls at Kew had lately died, their crops being found to be full of the fruit of the common Laurel. As the pulp is harmless it was suggested that perhaps their death was due to prussic acid being developed from the kernels, though the presence of the stone appeared to negative that being the cause, otherwise it was difficult to account for it. This suggested to Mr. Morris the desirability of remarking upon the exceedingly objectionable habit of visitors throwing fragments of cigarettes to the swans and other fowl at Kew; nicotine, it need hardly be observed, being a deadly poison.

Laburnum as a Poison.—Dr. Müller observed that although the Laburnum appears to be exceedingly poisonous in all parts of the tree, the roots, flowers and seeds having all been known to have poisoned human beings, yet rabbits will eat the bark with impunity.

Phylloxera at Chiswick.—Mr. Morris called the attention of the Scientific Committee to the appearance of this disease, and invited the members to pronounce as to the treatment of it; as it is undoubtedly present in one vine in the Chiswick gardens, containing young plants from Hungary. It was first observed on a single plant at one corner, but both root and leaf galls have been found on another plant at the other end. Although the presence of the phylloxera would suggest the opportunity for a careful series of investigations and experiments, yet

it was the opinion of the Committee that it was far too serious a matter, and they were unanimous in counselling instant destruction of everything growing in the house. The following process was suggested and will be carried out at once:—1, Syringing the whole of the interior of the fabric as well as the ground and Vines with water, then to burn sulphur, the presence of the water being desirable in order to absorb the sulphurous acid gas; this process is to be repeated. 2, To burn every part of every plant as well as to calcine the soil thoroughly. 3, To remove and burn all rotten or defective wood that may be in the house; and lastly, 4, to have the whole of the woodwork well scraped and repainted. It is hoped that these suggestions will be useful and followed out elsewhere should the phylloxera appear in other gardens.

Vines, Atrophied Foliage of.—Mr. Morris showed specimens of a very common condition of Vines, several occurring in the house above mentioned, in which the lateral shoots were dwarfed, the leaves being only about an inch across. It has been a source of great trouble to Vine growers for many years. Dr. M. Ward undertook to examine into the cause.

Tomatoes Diseased.—Mr. Morris showed specimens from the gardens at Chiswick attacked by Phytophthora. As this appears to infect the Tomatoes when growing in the open, it is suggested that whenever possible they should be at once transferred indoors to a warmer and drier atmosphere, Tomatoes requiring a warmer climate than the average English summer to ripen properly. This treatment appears to invigorate them, and renders them not only less susceptible to the disease, but has been known to check the further growth of the fungus at once.

Heteræismal Fungi.—The following communication was received from Mr. Plowright, accompanied by specimens:—

Puccinia Festucae, n. sp.—This species occurs on *Festuca ovina* and *F. duriuscula*. The æcidiospores occur on the common Honeysuckle. After a long series of unsuccessful cultures upon various grasses and other plants, extending over a period of eight years, I was this year induced to try the effect of placing the spores of *Æcidium periclymeni* on *Festuca duriuscula* and *ovina*. In both cultures the Uredo was produced. I also succeeded in producing the *Æcidium* on *Lonicera periclymenum* from the germinating teleutospores. The last named are in shape somewhat similar to those of *P. coronata*, with which species they have previously been confounded. The material from which the *Æcidium* was produced is on the table, as well as the artificially produced uredospores and the æcidiospores from which they were produced.

Puccinia Agrostidis, n. sp.—The æcidiospores of this species have long been known under the name of *Æ. Aquilegiæ*. Mr. J. H. A. Jenner was kind enough last August to conduct me to a secluded spot in Abbott Wood, near Lewes, where he had for several years previously found the *Æcidium* on the wild Columbine. We carefully examined the grasses in the vicinity, and came to the conclusion that the teleutospores probably occurred on *Agrostis alba*. Material was brought home to Lynn, and from it this year the *Æcidium* was produced on *Aquilegia vulgaris*. In May of this year Mr. H. T. Soppitt conducted me to a spot on the east shore of Lake Windermere where the *Æcidium Aquilegiæ* occurs. Specimens were obtained from which both Mr. Soppitt and myself produced the uredospores on *Agrostis alba* and *vulgaris*. The material used for these cultures is on the table.

Puccinia Digraphidis, Soppitt.—Mr. Soppitt's discovery that the *Æcidium* on Lily of the Valley is connected with a *Puccinia* on *Phalaris arundinacea* is very interesting—the more so when we remember that this Grass is known to be the host plant of several other *Pucciniae*—viz., *P. sessilis*, which has its æcidiospores on *Allium ursinum*, *P. Phalaridis*—which has its æcidiospores on *Arum*, *P. maculatum*, and a form of *P. coronata*—the life-history of which is at present uncertain. The Lily of the Valley, on which I produced the *Æcidium* from *P. Digraphidis*, has been growing in my garden at King's Lynn since the year 1879, and has hitherto been free from any *Æcidium*; but eight days after the germinating æcidiospores of *P. Digraphidis* were applied to it the Lily leaves began to show signs of the presence of the parasite, which in due course developed into the perfect *Æcidium*. This culture was done at the request of Mr. Soppitt, in order that his discovery of host plant bearing the teleutospores of the Lily of the Valley *Æcidium* might be confirmed by an independent observer. The *Æcidium* produced and the material used for producing it are on the table.

Uromyces maritima, Row.—The life history of the *Æcidium* on *Glaux maritima* was unknown until the present year. In August last Mr. Peake, jun., of Hull, was kind enough to conduct me to only known British locality for this *Æcidium*—on the banks of the Humber. From an examination of the surrounding plants I came to the conclusion that the *Æcidium* on *Glaux* was due to the *Uromyces* on *Scirpus maritimus*. A supply of the *Uromyces* was collected, and this spring applied to *Glaux maritima* in my garden at King's Lynn. In due course the æcidiospores were produced; these in turn were applied to healthy plants of *Scirpus maritimus* and the Uredo produced. The specimens used in their culture are exhibited.

Æcidium on Black Currant Leaves.—This fungus was found by my friend the Rev. Canon Du Port, on the Norfolk Broads, in June, 1890. Its life history is at present unknown, although I have visited the spot, and hope to be able to work it out from material collected. Whether it be the same species as occurs on Gooseberry pretty commonly in various parts of the country experimental research alone can determine.

Melampsora vernalis on Saxifraga granulata.—This fungus, which is doubtless the teleutospore form of the so-called *Cæoma Saxifragæ*, was found by Mr. James Taylor of Clarkfarquhar, is also exhibited.

Melampsora on Salix repens.—The uredospores of this were this year produced on a plant of *S. repens*, that has been growing for three or four years in my garden, by applying to it the spores of *Cæoma Orchidis*. It is, probably a distinct and undescribed species, as no effect was produced on *S. caprea* and *viminialis* by the *Cæoma* spores. *C. Orchidis* has been the subject of many cultures made by me during the past nine years. The infecting material and the uredo produced are exhibited.

Potato Disease.—It would be highly desirable if some simple experiments could be conducted this year. The long-continued rains will doubtless induce the disease, and as such experiments could very easily be made it seems a pity the opportunity should be let slip. The effect of high moulding of alternate rows of some variety fairly susceptible is all that is required to show the protective influence of an efficient earth covering on the tubers; but the recent experiments in France and in America showing how powerful are the restraining influence of copper dressings applied to the foliage of the plants upon the development of the *Phytophthora* certainly ought to be tried. Now that we know the mycelium of the *Phytophthora* is localised, and that it does not extend "down the stems and along the roots," it is obvious that the spread of the disease takes place only by the enormously prodigious production of the conidia, hence it follows that any agent which can arrest this development, and also sterilise such conidia as may alight upon the healthy foliage, must have a powerful influence for good in checking the spread of the disease. The power that copper dressings have limiting the spread of the *Peronospora* on the Vine has been known in France for many years." A vote of thanks was given to Mr. Plowright for his valuable communication.

In accordance with Mr. Plowright's suggestion a sub-Committee was appointed consisting of Dr. M. T. Masters, Mr. C. B. Plowright, and Rev. G. Henslow (with power to add to their number) to carry out investigations at Chiswick upon the value of high-moulding, as well as of the use of sulphate of copper and sulphate of iron in preventing or arresting the Potato disease. Dr. Masters reminded the Committee that most valuable results were almost accidentally obtained in 1888, when of two rows most deplorably attacked by *Phytophthora* one was earthed up with but little hope of its being any use to protect the tubers. The results, however, were most astonishing, as follows:—"Out of fifty tubers taken from the row moulded in the ordinary way thirteen were found diseased, or 26 per cent. Out of fifty taken from the high-moulded row five only were noted as diseased, or 10 per cent. Subsequently twenty-five tubers from each row were put aside for future examination. Of the twenty-five taken from the row earthed up in the usual way thirteen were diseased and twelve sound. Of the twenty-five taken from the row earthed up in the Jensenian manner on August 10th, when the haulms of both rows appeared to be equally rotten with disease, all the tubers were sound."



EVENTS OF THE WEEK.—To-day (Thursday) the Royal Horticultural Society's Floral Committee will meet in the Chiswick Gardens at 2 P.M. On Friday, August 1st, the B. S. Williams Memorial Committee meet in the offices of the Gardeners' Benevolent Institution, 50, Parliament Street, Westminster; and the Gardeners' Orphan Fund Committee meet at the Horticultural Club, Hotel Windsor, at 6 P.M. on the same day. On Saturday, August 2nd, the Southampton Show will open, continuing until Monday night. On Tuesday, August 5th, the Leicester Summer Show will be held in the Abbey Park; and the British Fruit Growers' Association will hold a Conference in the Show ground on the same day, James Ellis, Esq., M.P., in the chair.

— THE WEATHER.—In the Metropolitan district the weather has been much more settled and favourable during the past week than we have had for some time. Many have taken advantage of the first opportunity to get in their hay. Flower beds and borders are brightening up a little, and it seems possible that a glimpse of summer may now be obtained.

— A MEETING of the BRITISH FRUIT GROWERS' ASSOCIATION was held last Thursday in the Horticultural Club room, T. Francis Rivers, Esq., in the chair. The principal business was concluding arrangements for the Conferences at Leicester, the Crystal Palace, and Brighton, on August 5th, September 5th, and September 11th respectively. It was stated that the Exhibition at Leicester is expected to be a large one, and with fine weather the attendance is always good,

* From "Gardeners' Chronicle," Nov. 17th, 1888, page 572.

Abbey Park being a popular place of resort. At Brighton the Conference will be held in the King's room at the Royal Pavilion. A most encouraging letter was read from Sir Edwin Saunders, and that gentleman was unanimously elected a Vice-President, together with W. B. Waterlow, Esq., Dr. S. Makovski, and W. H. (Bullock) Hall, Esq. Mr. L. Castle stated with regard to the proposed holiday trip by himself and Mr. Gordon in Ireland, that a large number of letters had been received offering suggestions as to the route to be taken, much of the information indicating that fruit is successfully grown in many districts, and that the crop this year is satisfactory.

— THE NATIONAL CHRYSANTHEMUM SOCIETY'S ANNUAL EXCURSION.—The annual summer outing of the above Society's members and friends, under the guidance of Mr. W. Holmes, took place on Monday last, July 28th, and over eighty assembled at Paddington Station to journey by the 10 A.M. train to Reading. Walking to Caversham Bridge, the party proceeded thence in the steam launch "Fashion" down the river to Henley, where arrangements had been made for dining. After dinner the larger portion of the party returned to the launch and had an enjoyable trip down the river to Marlow, returning to Henley for tea, and then home *via* Reading. A few of the more ardent horticulturists climbed a considerable hill on the Berks side of the Thames and visited the delightful garden at Park Place, the residence of John Noble, Esq., and where for many years the accomplished gardener, Mr. Stanton, has worked with so much success. The views over the valley of the Thames, the picturesque town of Henley, with the finely wooded Chiltern Hundreds as a background, were exquisite, and the day being clear, a long stretch of country in the direction of Reading was visible.

— By the kindness of Mr. Robert Owen a still smaller portion of the party was enabled on the return to Henley to enjoy a ride through a charming district by the way of Marlow to Maidenhead. GREENLANDS, the residence of the Right Hon. W. H. Smith, a short distance below Henley, was first visited, and there, under the guidance of the excellent gardener (Mr. Perkins), a tour of that most interesting garden was commenced. Details of all that was seen cannot be given now, but mention must be made of the exceedingly fine Grapes, especially the Muscats and Madresfield Courts. Grand bunches, colouring well, and a fine crop, indicate the kind of cultivation they receive. The last-named variety we have never seen in better condition, and "cracking" gives no trouble, plenty of water at the roots of the Vines and liberal ventilation preventing any disaster of that character. Leaving Greenlands the drive through Marlow was delightful, then along the other side of the river to Maidenhead it was equally agreeable, and the journey by road concluded with a hurried inspection of Mr. Owen's large collections of Tuberous Begonias, seedling Chrysanthemums, and other plants. A quick run to Paddington from Maidenhead completed a pleasant day's outing, which had been favoured throughout by fine weather.

— ON some of the South and West England railway lines STATION GARDENS are often rendered extremely bright, and two of the companies treat their station masters very liberally in allowing them ground for cultivating. Some take up the ornamental side of gardening and render the stations florally attractive for a good portion of the year, others by growing fruit and vegetables secure a welcome addition to their salaries. At Merton Abbey station, on the line from Ludgate Hill to Wimbledon, there is a good example of what can be accomplished in the latter direction. Mr. Young, the station master there, devotes his 40 or 50 rods of ground at the side of the line to Strawberries, Red and Black Currants, and Gooseberries, with a few vegetables and Roses, and by careful attention in his spare time he succeeds in producing remarkably good fruit. Early Strawberries in particular on a warm bank are admirably grown, and would compare favourably with the best in the market. Mr. Young is enthusiastic and evidently derives both pleasure and profit from his little garden.

— A VARIED and extremely successful Show was held by the SURREY HORTICULTURAL SOCIETY on Wednesday and Thursday last week in the grounds attached to Casino House, Herne Hill, the residence of W. G. Gover, Esq. Three tents were filled with plants, flowers, fruit and vegetables, all of good quality throughout. Some of the principal prizetakers were Mr. J. Lambert, gardener to H. W. Segelcke, Esq., Elfindale Lodge, Herne Hill; Mr. W. Monk, gardener to G. R. Higgins, Esq., Eastlands, Dulwich; Mr. J. Day, Casino Gardens; Mr. W. Clark, gardener to W. Sopper, Esq., Eversley, Herne Hill; and Mr. Fullbrook, gardener to B. B. Baker, Esq., Palace Road, Streatham. Messrs. Laing & Sons, Forest Hill, had a handsome

non-competing group, one of the most effective we have seen this season.

— THE EALING GARDENERS' ASSOCIATION.—The members of this Association spent a pleasant day at the well-known establishment of Messrs. Sutton & Sons, Reading, on Monday last, July 28th. The party, numbering about ninety, inspected the trial grounds, replete just now with interest, seed warehouses, and nurseries. Messrs. Sutton entertained the members in a hospitable manner, and the visitors returned thoroughly satisfied.

— GARDENING APPOINTMENTS.—Mr. H. Elliott, late gardener at Mulgrave Castle, Whitby, has been appointed gardener to the Rt. Hon. Lord Hillingdon, The Wildernes, Sevenoaks, and is succeeded at Mulgrave by Mr. James Corbett. Mr. A. J. Brown, late gardener at Bear Park, Aysgarth, Yorks, has been appointed gardener and bailiff to the School of Handicraft, Chertsey, Surrey. Mr. George Groves, foreman at Rangemore Gardens, Burton-on-Trent, has been appointed gardener to General Owen Williams, Temple House, Great Marlow, Bucks.

— SELECT CARNATIONS AND PICOTEEES.—In reply to Mr. Robert Sydenham (page 76) respecting my paper on the Carnation, I desire to say that from circumstances over which I had no control, I have been prevented from giving any trial to the new varieties of the past two seasons. Those named are well known as good for almost all growers of the Carnation. No list of Picotees was given, as the paper referred more particularly to Carnations.—D. COOPER.

— LAXTON'S NOBLE STRAWBERRY.—I quite endorse all that Mr. McIndoe writes in favour of this variety as an early forcer. Here it succeeded splendidly, the fruits were perfect in shape, much larger and more highly coloured than those grown in the open air; in fact the fruits were phenomenal, and I was asked the question, "What is the variety?" As I had no complaints as to its flavour or its travelling qualities I conclude that these also were satisfactory. Our method of growing early Strawberries is to start them in a gentle bottom heat afforded by leaves close to the glass, where they remain until after they have flowered and set, when they are removed into a rather moist, temperate house until the fruits begin colouring, and are then finished in a dry, warm, airy greenhouse.

— ALEXANDER PEACH.—It may, perhaps, interest your readers to learn that I began gathering this variety from the open wall on the 15th of this month. Medium sized fruits, beautifully coloured, juicy and good flavoured. Hale's Early, which follows, will not be ready for quite another fortnight. I consider Alexander the best early one we have, it is a good grower and crops well.—JOHN AUSTEN, *Witley Court*

— MARIE LOUISE VIOLETS.—I herewith send you a gathering of blooms of this variety from plants now making their growth, preparatory to being lifted in October and placed in frames. We always plant out the runners early in May, and usually commence picking in August. This year, however, the plants are unusually robust; they are flowering freely, and will continue doing so right on till next May. The whole bed is now well mulched with spent Mushroom manure, and receives a thorough drenching from the garden engine twice weekly. This treatment keeps them moist at the roots, and defies our old enemy red spider.—JOHN CRAWFORD, *Coddington Hall, Newark*. [The flowers sent were delightfully fresh and fragrant, also large and full.]

— A SCOTCH correspondent writes:—"I suppose you need not be told what UNSEASONABLE AND UNGENIAL WEATHER we have had and are still experiencing. We have had only two dry days since the 4th of May, but no twenty-four hours has been dry yet. It is impossible to get weeds killed, and crops are not progressing; Strawberries are not swelling and are rotting on the ground. Bees have had only two days in June and July that they increased in weight any. At present there is no prospect whatever of any honey. On July 22nd the thermometer stood at 63°, and the wind was a perfect hurricane, with a sinking barometer. We are in great need of sunshine with a higher temperature. Unless that comes there will be no honey from the Heather either. I hope, however, for all and everything concerned the weather will improve."

— FRUIT CROPS.—The present year cannot be called a good one for fruit, with the exception that Strawberries, Red and Black Currants, and Raspberries are good in this neighbourhood; but Gooseberries only a moderate crop. Apples and Pears are almost a failure, especially the former. Many of the orchard trees and pruned bushes have only a slight sprinkling of fruit. The varieties showing the best crops of

Apples are Dutch Codlin (good), Ribston Pippin, Northern Greening, King of the Pippins, and Baldwin. Of Pears the best crops are on Jargonelle, Williams' Bon Chrétien, Lammas, Ne Plus Meuris, Beurré Rance, and Brown Beurré. Apricots and Plums are scarce; of the latter Orleans and Victoria are the best, and those are on walls. Peaches and Nectarines are a fair crop. Nuts good. There was a plentiful supply of blossom on the standard pruned bush and wall trees, particularly Apricots and late Apples; but with 16° of frost when the former were in bloom, and wet weather when the Apples were flowering, little fruit followed. The caterpillar has been prevalent amongst the Apple trees, but I have seen small birds (blackcaps) working amongst the trees, and doubtless destroying many of the pests.—A. HARDING, *Orton Hall Gardens, North Hunts.*

KENTISH FRUIT GROWERS AND FOREIGN COMPETITION.—

It has come to the knowledge of the Kent Fruit Growers' Association that a large consignment of French Black Currants, packed in the almost purely English class of packages, the half sieve, upon which was painted in the usual way the name of a well-known London salesman, has been forwarded to London. There was nothing on the half sieve to indicate the foreign origin, and the chief of the Customs at the port of arrival was asked to detain the fruit, which he did. Upon the Customs authorities being communicated with further, they replied that hitherto it had not been found necessary to detain any similar consignment, because the packages had not been considered to bear any marks to which exception could be taken. The case has been carefully considered by the Association, and the members are unanimously of opinion that some steps should be taken to ascertain if the Customs authorities are correct in their view, as if so there can be no guarantee that the fruit so packed will not be sold by the salesmen in London or other markets as an English product. It is stated that the one consignment under notice depreciated the price of English Black Currants to the extent of £3 per ton. Mr. W. W. Berry of Selling, a large fruit grower, said that he has been informed foreign fruit so packed, and in English baskets, has been imported, but with a small strip of cardboard labelled "French fruit" slipped under the sticks on the top of the baskets, for the purpose of complying with the terms of the Merchandise Marks Act. The Association has decided to take steps to bring the matter before Parliament.

THE FERN CONFERENCE.

THE following is the official list of awards made by the Judges at the Chiswick Fern Conference, July 22nd and 23rd.

Medals.—Gold to Messrs. W. & J. Birkenhead, and to Messrs. J. Veitch and Sons.

Silver-gilt Flora to Mr. H. B. May, to C. T. Druery, Esq., and a silver Flora to J. A. Whallett, Esq.

Amateurs' Competition.—The silver challenge cup, offered by N. N. Sherwood, Esq., for the best collection of hardy Ferns, was awarded to E. J. Lowe, Esq.

There was no competition for the cup offered by D. Morris, Esq., for hardy Filmy Ferns grown without heat.

Certificates of Merit.—*Athyrium filix-fœmina stellatum angustatum*, A. f.-f. *percristatum* J. S. Cousins, A. f.-f. *plumosum superbum*, from C. T. Druery, Esq.

Blechnum spicant ramo-cristatum, B. s. *concinnum*, B. s. *plumosum* (Airey), from C. T. Druery, Esq.

Scolopendrium vulgare var. *crispum* (Wills), from C. T. Druery, Esq.

Trichomanes radicans var. *crispum cristatum*, from E. J. Lowe, Esq., F.R.S.

Adiantum Capillus-Veneris var. *autumnale*, from E. J. Lowe, Esq., F.R.S.

Nephrodium paleaceum pendens, N. p. *cristatum globosum*, from E. J. Lowe, Esq., F.R.S.

Aspidium angulare vars. *plumosum foliosum*, *polydactylum variegatum*, *latifolium grandiceps*, *remoto-decurrens*, *divisilobum plumosum*, *flabellipinnulum*, *decompositum frondosum*, *plumosum coronare*, *divisilobum plumosum imbricatum*; *aculeatum* var. *pulcherrimum*, var. *Abbottæ*, from E. J. Lowe, Esq.

A. a. d. p. *Baldwinii*, from J. L. Baldwin, Esq.

Nephrodium spinulosum var. *spectabile*, from E. J. Lowe, Esq.

Aspidium aculeatum hybridum and *Nepos*, from E. J. Lowe, Esq.

Scolopendrium vulgare (*undulatum*) *Synthesina*, from E. J. Lowe, Esq.

Aspidium angulare (*plumosum*) *plumosissimum*, from E. J. Lowe, Esq.

Scolopendrium vulgare undulatum muricale spirale, S. *crispum reflexum*, S. c. *grandiceps*, S. c. *Cowburnii*, S. c. *robustum*, S. c. *augustum*, S. *variegatum aureolum*, S. v. *luminare*, S. *projectum princeps*, S. p. *capitatum*, S. *perforatum rosetta*, S. *inæquale cristatum pericallis*, S. *ramosum Alexandræ*, from E. J. Lowe, Esq.

Asplenium filix-fœmina cruciatum columnare, A. *calomelanos*, A. *Victoria*, A. *gracile*, A. *uncum cruciatum*, A. *cristatum magnificum*, A. *grandiceps coronare*, from E. J. Lowe, Esq.

Todea pellucida ferulaceum, from Messrs. J. Veitch & Sons.

Pteris serrulata cristata parvula, from Messrs. J. Veitch & Sons.

Scolopendrium crispum fimbriatum lutescens, S. *grandiceps fimbriatum*, S. *crispum fimbriatum cristatum*, from H. Stansfield & Co.

Gymnogramma chrysophylla var. *grandiceps superba*, from Mr. H. B. May.

Pteris aquilina depauperatum grandiceps pendens, from Messrs. W. & J. Birkenhead.

Athyrium filix-fœmina setigerum percristatum, and A. f.-f. *Frizilliæ coronare*, from Messrs. W. & J. Birkenhead.

Adiantum manuatum, from Messrs. W. & J. Birkenhead.

Polystichum angulare var. *pulcherrimum* (Wills), from C. T. Druery, Esq., F.L.S.

Lastrea montana var. *cristata gracile*, from C. T. Druery, Esq., F.L.S.

Dicksonia (hybrid) *Lathamii*, from Mr. W. B. Latham.

PACHIRA INSIGNIS.

FLOWERS of this remarkable tree were shown at one of the Royal Horticultural Society's meetings recently, and so seldom are they seen outside botanic gardens that they attracted much attention. The genus *Pachira* is a relative of the Baobab, *Adansonia*, and a member of the natural order Bombaceæ, by some ranked as a section of the Malvaceæ. There are several species natives of tropical South America, and distinguished by great size of their flowers, with dense bunches of stamens with the long filaments deep red, and forming the most conspicuous portion of the flower.

Pachira insignis, also known as *Carolinea insignis*, is a handsome tree with deeply divided leaves and pale red flowers, with long spreading divisions. The stamens bearing red filament and lighter, nearly white anther, contrasting well with the other portions of the flower. The tree is found in Martinique and some other West Indian islands. It also grows in the South American mainland in several districts. Under cultivation here it requires stove treatment and a spacious house to see to advantage.

Other species of *Pachira*, such as *P. alba*, are valued for their inner bark, which is converted into cordage.

THE LEICESTER ABBEY PARK.

THIS fine park, embracing about seventy acres, is formed upon the site of what was formerly known as the "Abbey Meadows," a low-lying swampy piece of land adjoining the river Soar. It was laid out by the Corporation of Leicester from designs by Messrs. W. Barron & Son, and was opened to the public on the 29th day of May, 1882, by Their Royal Highnesses the Prince and Princess of Wales, Alderman H. T. Chambers being the then Mayor of Leicester. Mr. John Burns, the able Superintendent, was appointed to the position he now holds a considerable time before the park was opened, and during the eight years which have since then elapsed each successive season has seen additional alterations and improvements effected, until at the present time it is generally said by critics, well able to give an opinion on the subject, that there is no more beautiful park in the provinces, and that in its bedding arrangements and general keeping it is quite equal, if not superior, to the London parks.

In the original formation of the park materials were obtained for raising the ground level, and for the formation of extensive mounds and sloping banks, by widening the river bed, forming thereby a fine breadth of ornamental water dotted with islands; also by the formation in the centre of the park of a lake of considerable extent. The banks and mounds were thickly planted with shrubs, which for several seasons made little progress. During the last four or five years, however, the shrubs and trees have grown most luxuriantly owing to the depth and great fertility of the soil composing the banks, insomuch that although the park is near to the principal manufacturing portion of the town, and is bounded on three sides by large factories and lofty chimneys, these are almost entirely shut out from view, and visitors to the park unacquainted with the facts might readily suppose themselves to be a considerable distance from the town. One cause for this lies in the fact that Leicester is an essentially clean town, and that the principal manufactures carried on, not being of a nature requiring the consumption of large quantities of coal, like the heavier trades of other large towns, very little smoke is made, and the shrubs and trees have the bright and clean appearance which is usually only seen in country districts.

In making our tour of the park we start from the main entrance on the Abbey Park Road, the gates of which are of wrought iron finely ornamented, those forming the carriage entrance bearing the arms and monogram of the Prince of Wales, the Borough, the Mayor, and others. On each side of this entrance are lodges in the Tudor style of architecture covered with climbers

one being occupied by the Superintendent, and the other by his principal foreman and propagator. Taking the carriage road to the right we pass on the left a broad piece of well kept lawn

raised the immense quantities of bedding plants annually used, and a fine large Chrysanthemum house capable of housing satisfactorily some 1500 plants. This house was built a few years since by



FIG. 13.—PACHIRA INSIGNIS.

devoted to lawn tennis, and on the right another smaller breadth laid out as a bowling green. Also on the right, and adjoining this bowling green, are the glass houses, pits, and frames, where are

public subscription, from designs furnished by Mr. Burns. The roof is formed of a double span, the centre supported by light columns. No staging is provided, the interior of the house being

laid out as a garden with gravel walks and beds. The roof, sides, and columns are beautifully draped and festooned with climbers, amongst which *Cobaea scandens variegata* and a number of the best varieties of *Clematis* take a leading part. In a piece of fenced in ground adjoining a fine collection of *Chrysanthemums* are being grown for filling the structure in the autumn, most of them on the cutting down principle as advocated by Mr. Orchard.

Proceeding along the carriage drive immediately past the bowling green on the right, a broad walk leads past some well kept shrubberies and herbaceous borders. Amongst many other good plants broad patches of *Campanula carpatica* and its white variety are now very beautiful. On the opposite side of the river rise the ancient walls of the Abbey grounds, with the picturesque ruins in the background. The old Abbey is famous in history as having been the last resting place of Cardinal Wolsey. Much of the historical interest might be mentioned in connection with these fine ruins, but space will not here permit. They are now, and have been for many years past, occupied by Messrs. Warner of the Abbey Nurseries, who kindly offer every facility for visitors inspecting the same; but this notwithstanding, it seems a great pity that such a place of so much antiquity and historical fame should not ere this have been acquired by the town, and its grounds incorporated with the beautiful park of which from its contiguity it appears now to naturally form a part.

Further to the right, and in the extreme north-west corner of the park, bounded by the river and the Abbey Park Road, is a new botanical garden, now in course of formation by Mr. Burns, in which is already collected many alpine, medicinal, and officinal plants, all well and distinctly labelled, with their botanical and popular names. A number of young men students of botany meet here weekly with their instructor to study from the living plants. This garden, when completed and fully planted, promises to be one of the most interesting portions of the park.

Retracing our steps to the main carriage drive we have on the left a large breadth of lawn, having an ornamental rustic band stand in the centre, which on two nights a week is occupied by the Leicester Police Band. The lawn is encircled by a broad asphalt walk, on which are placed numbers of seats, with four large rustic summer houses at the cardinal points, affording shelter in case of storms, the whole bounded by a belt of shrubberies. A walk here leads off the main drive to the left, which takes us past a very large circular bed, the principal plants used in which are *Coleus Taylor's Pet*, *Alternanthera amabilis*, *Iresine Lindenii*, *Mesembryanthemum cordifolium variegatum*, *Pachyphyton Brownii*, *Spergula pilifera aurea*, *Herniaria glabra*, and *Echeverias*. Immediately behind this bed is a fine healthy English Oak, planted by H.R.H. the Princess of Wales on the occasion of opening the park. This bed and Royal tree occupy a sheltered nook of lawn bounded on three sides by high banks of shrubs, with a belt of large *Fuchsias* at its base, amongst which some fine specimens of *F. fulgens* are conspicuous. A little further along this walk some flights of rustic stone steps lead up to a large mound, on the top of which is good artificial example of ruins, surmounted by a flagstaff, and surrounded by broad asphalted walks, from which fine views of the park are obtained. At the foot of this mound, on its western side, is the lake, dotted with numerous islands, which are well furnished with suitable trees, amongst which are a very fine collection of *Willows* obtained by Mr. Burns from France. In two places rustic wooden bridges are thrown across arms of the lake, which have a pretty effect as seen from the mound.

At the farther end of the lake is another raised plateau, on which is situated the pavilion, where refreshments are dispensed and shelter provided on a similar plan and scale to those in the principal London parks. Immediately below and in front of this plateau is situated the main portion of the bedding-out display, and which, as seen from the terrace, has a very beautiful effect. Along the slope of grass leading down from the terrace to the walk below is a chain pattern of small beds planted with variegated *Pelargonium Foster's Seedling*, a capital silver variegated sort, with rosy pink flowers; *Alternanthera* and *Lobelia King of the Blues*, a charming new blue, with large white centre and very compact habit. The plainness of this scroll of small beds is relieved by four larger beds, placed at regular intervals, and planted with a fleur de lis pattern as carpet beds. On the broad lawn fronting this are about sixty large beds forming corresponding geometrical designs, on each side a broad central walk running through the same. The planting of these large beds throughout is highly effective. A very attractive combination is some large circular beds of white-edged variegated *Pelargoniums*, the bed surfaced underneath and around them with the common Cat Mint. All the best bedding *Pelargoniums* are used, large beds of *Henry Jacoby* being especially effective. A broad walk runs entirely round the lawn, containing this principal

geometrical design of beds, and is flanked on the side farthest away from the pavilion by a single chain of very large beds, oblongs and circles alternately, which, being planted with bold and striking colours, form a very fitting background to the main bedding display. The four large oblong beds are each planted with *Gladioli* of sorts, and have a groundwork of *Violas*, blue, white, and yellow, in lines. The six circular beds are planted in pairs. The central pair are filled with *Merveille de Lyon Rose* in fine condition. The next pair are *Lilium lancifolium*, *Hyacinthus candicans*, *Lobelia cardinalis*, and a surfacing of the old *Melindris Verbenas*. The outside pair are mixed *Verbenas*. At the back of these, looking to the left from the pavilion, is another very large carpet bed, circular in shape and surrounded by the broad gravel walk. The main feature of this bed is a large Maltese cross in *Iresines Lindenii* and *Herbstii*, filled in with shields and scrolls, which are richly and effectively planted.

Again, looking to the right from the pavilion, we have a broad walk leading to the sub-tropical ground, the formation of which is one of the later works of Mr. Burns, and is so well done as to have become one of the finest and most attractive features of the park. Traversing the walk leading thereto we notice on either side grand specimens, in large tubs; of *Agave mexicana* and *A. m. variegata*. Right in the centre of this garden is a very large raised bed planted entirely with a fine collection of succulent plants, most of them legibly and distinctly named, and their grotesque shapes are a never ending source of interest and amusement to visitors. The broad borders and beds surrounding are well filled with healthy looking plants in great variety, many of them usually considered as requiring constant stove treatment. A large bed of *Cannas* in the background has for its centre a good specimen of *New Zealand Flax* (*Phormium tenax*) which has recently flowered on a branching stem some 10 feet in height, and is now carrying numerous large seed pods. Very striking amongst the foliage plants is a large example of *Begonia plantanifolia*, also *Phormium atro-purpureum*, *Eurya latifolia variegata*, *Jacaranda mimosæfolia*, some immense specimens of *Ficus elastica*, and many others.

At the opposite end of the flower garden from the sub-tropical grounds, in an angle formed by the junction of several main walks, is a raised triangular bed of large size, containing a large collection of rock and alpine plants, in healthy patches, most of them distinctly named, and the whole in excellent order and condition. Returning by the eastern side of the park we have long winding walks and immense breadths of well kept lawns, backed by broad belts of shrubs. It is on this side that the great summer flower show and gala is held, which mainly owing to the energy and tact of Mr. Burns, who is the Secretary and Curator, has for several years past been a great success.

Returning again to the river, which is on the opposite or western side of the park, we find a broad path running along the river bank the entire length of the park, with seats conveniently arranged at close intervals and a broad belt of lawn on each side. The side sloping down to the river's edge is very convenient for anglers, the other side is backed by an herbaceous border and belt of shrubs; an avenue of deciduous trees, *Planes*, *Limes*, and others overhangs the walk, being planted in the turf, thus forming a charming promenade nearly half a mile in length, with the old abbey walls, grounds, and ruins in the foreground across the water, to add a tinge of romance to the situation. As years roll on, and the overhanging trees become larger, this walk will be greatly appreciated by the young men and maidens of Leicester as an enjoyable promenade on which to tell over and over again the old, old story.

Adjoining to the river bank, but on the park side of the shrubbery bounding the same, is a large breadth of ground planted with *H.P. Roses*, very strong, and now producing a grand lot of flowers. All have large bold labels, the names upon which are easily read from a distance, and the rosery is therefore doubly interesting to visitors. One of the most commendable features in the management of this excellent park is the system of labelling legibly and distinctly with the botanical and popular names in most cases, and in no instance did I detect a case of misspelling, a point upon which Mr. Burns is very particular, as he says he has a horror of misspelt labels.

In conclusion, I cannot speak too highly of the excellent order and keeping of the park throughout, reflecting, as it does at every point, the ability and tact of the Superintendent, in which he appears to be ably seconded and supported by his foreman Mr. Burton. Mr. Burns has also proved himself to be not only an excellent Curator and Park Superintendent, but also a most efficient landscape artist—not only by his work in evidence in the Abbey Park, but in another public park on the other side of Leicester, which was formed and laid out entirely from his plans and under his supervision five years ago, and is called the "Spinney Hill Park," some

particulars concerning which must be reserved for a future number of the *Journal of Horticulture*.—W. K. W.

OAKS, BEECHES, AND ELMS.

FINE old trees connect the present age with the many that have gone before it, and remain, as it were, a living chronicle of the many revolutions of society that have occurred during their growth. It is, therefore, with no ordinary interest that we ought to look on such trees, venerable alike in appearance and in the associations they call up, and we ought to regard their loss as that of old friends when accident or misfortune deprives us of them. Fortunately of late years the laudable desire to retain those emblems of the past has greatly increased, as well as the love of other objects of antiquity. There is no reason why an old work of nature should not find the same favour as does an old work of art—a remnant of masonry is certainly not more an object of just interest than an aged Oak. The latter doubtless bears the mark of time, and if in a state of decay is looked on with feelings of interest; the other is regarded with regret that the barbarous usage of a former generation should have left us so little of a pile we gaze on with admiration. But old trees and old buildings are not unusually associated together, and nothing can keep company with greater harmony than those two relics of former times; not all the wealth of the present day can give that grandeur to a building which is often afforded by the old trees by which another structure of less pretension is surrounded.

How many of the abodes of our nobility are not less remarkable for the venerable appearance of the trees in their parks than for their dwellings. Who has not often heard of, and admired too, the stately Oaks, the sombre Beeches, and magnificent Elms, with which a park is studded? and while the mind is admiring their beauties as the visitor approaches the abode of the owner, a feeling of respect is engendered for bygone generations who have left such legacies to the present one.

Fine old trees also give an importance to a place which wealth cannot command; for however cleverly constructed the machines may be which the various inventors have patented for the purpose of transplanting large trees, fine old ones are beyond their power, and if such trees were even moveable, they are not often articles on sale.

With no ordinary interest, then, ought we to regard fine old trees. Trees of unusual size are scattered far and wide, and they often enough flourish unknown almost to any but to the limited residents of the locality. Unfortunately we are all too prone to pass by such things, only noticing in a vague manner that the tree "is a remarkably fine one." We take a walk round it, and a look-up to its top, and then with some exclamation about its great size, too often bestow upon it no more thought. Candour compels me to say that such has been too often all the notice I have taken of such trees; but I often meet with objects of remarkable growth in places not having the reputation of being the best adapted for such things, and I will adopt a different course for the future, for I think a little notice of such trees now and then will be of service to the community at large. The little that I am able to report on the matter is all from personal knowledge except where otherwise stated; but, unfortunately, the information is but meagre; nevertheless it may be the means of inducing others to report more interesting objects in other localities.

THE OAK.

Commencing with the acknowledged king of our forests, the Oak, I think I have seen at least four individual trees each asserting that dignified title. A very fine example of this tree, which to all appearance seemed likely to require some two or three centuries yet to bring it to perfection, so healthy and vigorous it seemed to be, was at Panshanger, the princely seat of Earl Cowper, in Herts. I have quite forgotten the extent of ground its umbrageous top hangs over, and a finer or healthier tree it would be difficult to find. Some very fine Oaks also adorn the noble park at Dunham Massey, the seat of the Earl of Stamford and Warrington, in Cheshire. These, however, to the best of my recollection, were more remarkable for the fine timber they contained than for any remarkable extent of top; but there were plenty of tall, fine, bold trees having a circumference of 15 feet and upwards at 5 feet from the ground; and a very large park was very heavily wooded with such trees. The soil seemed sandy, and if dry, the fall of rain in the neighbourhood, being greater than in most places, supplied the moisture, but I do not think it was deficient of that element. I was told there was a king of the forest here, but I had not the opportunity of seeing it; still the great number of fine trees astonished me. Next to the Oaks the Beeches were numerous and good, and other kinds were not wanting. Further northwards

there is some tolerably good timber in the best districts of the county of Durham; and one at Gibside contained something like eleven loads of timber some years ago. This tree was growing in a wood and was near the bottom of a slope, the soil a sort of hazel loam rather plentifully mixed with stones. It was a much less healthy tree than the one at Panshanger, but might, perhaps, contain more timber, and its top was not remarkable; in fact, some of its limbs had been broken off by high winds. I believe there are several places in Yorkshire remarkable for fine trees, but I have not visited them, and, therefore, leave their description to other hands; and Scotland has also its monarchs of the forests. An Oak at Netherwitton, in Northumberland, was once pointed out to me as good, and certainly it seemed of great size, but I forgot the particulars; and many districts doubtless would have had their fine trees at the present day had not the temptation to cut them in times gone by been so great as to tell seriously against their preservation. Even parks of established antiquity have at some period or other of their history been denuded of their ornaments by some needy or avaricious proprietor; but remarkable Oaks are of frequent occurrence, less perhaps so than Beech: the latter being a less valuable commodity in the market, there was not that inducement to cut for sale. Some fine Oak trees adorn the park of Knole, Kent, but those of Cobham in the same county are evidently of a more recent date. Everyone has heard of the fine Oaks of Windsor Park, and many other places may be cited as containing good specimens.

THE BEECH.

Next in importance to the Oak as a park tree is the Beech, and in habit of growth it is scarcely less beautiful; in fact, it is not unlikely that if we could divest ourselves of the poetic feeling attached to the Oak as being connected with our national greatness, it is not unlikely but the Beech would be regarded as the more noble in its growth. The habits of the trees are not so much unlike: a wide expanded top, with a bole more or less branched as the position of the tree may have determined. There are, however, some fine trees in other counties. The park of Knowle contains some fine avenues of Beech, as well as groups, and single trees innumerable; some are of remarkable size, but the bulk are still in what may be called excellent timber condition. Several stages beyond this state, however, have the Beeches advanced at Lullingstone, in the same county. Some measured little short of 30 feet in circumference at 4 feet from the ground, and by their appearance they looked as if they would outlive several generations yet of the human race. A dry hilly situation with chalk underneath was their abode. Beeches are also common in many places, not the least remarkable being some places in Bedfordshire and the adjoining counties.

THE ELM.

The Elm is a greater favourite with the farmer than with the poet, not that the farmer likes its presence any further than that the district where it grows spontaneously indicates good land. I believe the vale of the Thames contains some of the best Elm trees in the kingdom, and I have seen very good specimens in Oxfordshire. A good rich and deep soil suits this tree best, and on such a soil its growth is, perhaps, quicker than that of any tree we have, unless it be the Horse Chestnut. Elms are, however, not so long-lived trees as the Oak, Yew, Beech and others, for when decay sets in they much sooner succumb to it. We seldom see a hollow Elm, for the decay at the bottom eventually increases so as to weaken the collar, which gives way before a high wind, and down the tree comes. Unlike those trees mentioned, it does not appear that the root makes any effort to sustain the declining condition of the trunk by surrounding the remaining sound wood with bark and a fresh accession of layers. Instead of this the Elm root often decays also, or if left to a state of nature some rising suckers abstract all the nourishment. Elms furnish more suckers than most other trees, and to this, doubtless, may be attributed the shorter period of their existence as compared with these. Elms make an excellent avenue, and even as individual trees they look well; the expanded top and large sturdy limbs, striking boldly out in all directions, give the tree a noble appearance in autumn and winter. Its roots travel a long way for food, and quickly appropriate to themselves a heap of compost, mould, a flower bed, or anything tempting that comes in their way, in which case they rob their neighbours. A corn field is not unlikely to suffer from this cause. But the noble proportions of the tree entitle it to respect; for I should think that no other forest tree we have arrives at the size the Elm will do in a suitable soil. One which I know seems perfectly sound, and likely to increase in size for many years to come, is upwards of 16 feet in circumference at 5 feet from the ground, and apparently loses very little in thickness at 20 feet up.

There are several others of about the same dimensions. A good rich soil, not too shallow, suits the Elm; and its presence, like that of Nettles, often indicates a generous soil.—J. N.



SIMILARITY OF VARIETIES.

"DUCKWING" protests against the future coupling of Alfred Colomb and Benoît Comte. I should like to say the same of Madame Alphonse Lavallée and Marie Baumann. With me the former has been in every case a shade darker than Marie Baumann, besides being distinct in not having the colour quite so evenly distributed. But a still greater difference lies in their growth, Marie Baumann being a very moderate grower by the side of Madame Alphonse. In all these cases of identity I think amateurs who do not grow for show ought to understand that the rule about identity only applies to the bloom; otherwise I fear some useful Roses will never succeed in making their way in public estimation, owing to their similarity to some older well-known Rose with equally good blooms, but of inferior growth.—KITTEE.

ROSE ALFRED COLOMB AND BENOÎT COMTE.

I BEG to retract my letter about Benoît Comte and Alfred Colomb which appeared in your last issue. It was written under a mistaken impression that the two had been coupled together by the N.R.S.—DUCKWING.

ROSE SHOWS.

TIBSHELF.

THIS annual Exhibition of this Society, affiliated to the National Rose Society, was held on July 22nd in the Colliery Cricket Ground, and was very well attended, the weather being glorious. A liberal prize list brought together an excellent show of Roses, which were staged round the sides of the spacious circular marquee of former years, the centre being occupied by handsome groups of stove and greenhouse plants competing for the £10 offered by the Society. The annual fête, gala and athletic sports were held at the same time. Luncheon was provided for exhibitors in the schoolroom, and a hearty welcome was accorded to rosarians from a distance by an energetic committee. Tibshelf, no longer an unknown place in the Rose world, now ranks as one of the chief shows of the year.

In the class for seventy-two Roses Messrs. Harkness & Sons were awarded first prize, £6 and the gold medal of the National Rose Society, the best Roses in this stand being Etienne Levet, Duchess of Bedford, Mrs. J. Laing, Innocente Pirola and Charles Lefevre; Mr. H. Merryweather of Southwell being a good second. In the class for forty-eight varieties the awards were as follows. First (£4 10s.), Messrs. Harkness. Second, Mr. Merryweather. Third, Mr. J. Prior, Colchester. Fourth, Mr. W. H. Frettingham, Bæston. The best blooms in the first prize collection were Marie Finger (high colour) Comte Raimbaud, Le Havre, Mrs. J. Laing, F. Kruger (fine form and of deep colour), Jean Ducher. For thirty-six single trusses—First (£4) Messrs. Harkness. Second, the Rev. J. H. Pemberton. Third, Mr. Merryweather. For twelve Teas—First, Messrs. Harkness. Second, Mr. Merryweather. Third, Mr. Prior.

In the amateurs' division the Turner Memorial prize of £10 was given in addition to the Society's own prizes to the class for eighteen varieties, single trusses. The first prize (£7) was awarded to the Rev. J. H. Pemberton. Second (£4 10s.) Mr. E. B. Lindsell, Hitchin. Third (£2 10s.) Mr. W. Boyes, Derby. Fourth, The Rev. A. Foster-Melliar. For twelve varieties, single trusses, the awards were: First, Mr. Pemberton; second, Mr. Lindsell; third (equal), Mr. Boyes and Mr. H. V. Machin, Cateford.

WORKSHOP.

THE first annual Exhibition of this Society, which is affiliated to the N.R.S., was held on the cricket ground on Thursday, July 10th, and brought together competitors from all parts of England. Roses were of fine quality and staged in good condition. The young Society is to be congratulated on this its maiden effort.

In class 1, for forty-eight distinct, open, Mr. B. R. Cant of Colchester was first with fine substantial blooms, Messrs. Harkness & Sons, Bedale, being a close second; Mr. H. Merryweather of Southwell third. Six collections were staged. In class 2, eighteen Teas, open.—First, Messrs. Harkness & Sons; second, Mr. B. R. Cant; third, Messrs. Burch of Peterborough. In class 3, twelve of any one H.P.—First, Messrs. Harkness & Sons, with Ulrich Brunner; second, Mr. B. R. Cant, with Alfred Colomb; third, Mr. Merryweather, with Alfred Colomb. Class 5, twelve of any one white Rose.—First, Messrs. Harkness & Sons, with Souvenir d'Elise (a good stand); second, Mr. B. R. Cant, with Merveille de Lyon; third, Messrs. Burch, with Innocente Pirola. In class 6, twenty-four distinct, amateurs.—First, the Rev. J. H. Pemberton of Havering-atte-Bower; second, Mr. H. V. Machin, Cateford Hill; third, Dr. S. P. Budd, Bath. Seven collections were staged. In class 7, twelve distinct—First, Mr. H. Stewart; two entries. In class 8, twelve Teas.—First, Dr. Budd; four entries. In class 9, twelve trusses of any one Rose.—First, Mr. Machin; five entries. In class 10, twelve trusses, six

of any one H.P. and six of any one Tea.—First, Mr. A. Whitton, Bedale; six entries.

The silver medal for the best H.P. in the Show was won by the Rev. J. H. Pemberton, with Comte Raimbaud; silver medal for the best Tea going to Messrs. Harkness for Souvenir d'Elise.

MANCHESTER.

THE annual Exhibition of Roses took place in the gardens of the Society at Old Trafford on July 19th. The entries were unusually numerous, but the heavy rains of the two previous days must have spoiled the chances of some intending exhibitors who did not put in an appearance; still there was a remarkably good show, some very fine flowers coming from the north and some very fine Tea scented varieties were staged. The Show took place in the annexe, the light being excellent, with ample space for locomotion.

NURSERYMEN'S CLASSES.—There were seven collections of seventy-two varieties, one truss of each. Messrs. Harkness & Son, nurserymen, Bedale, were first with superb blooms, fresh, brilliantly coloured, and free from damage from rain, the leading varieties being Her Majesty, Etienne Levet, Heinrich Schultheis, Maréchal Niel, Horace Vernet, The Bride, Fisher Holmes, Lord Macaulay, Grace Darling, Elie Morel, Lady Helen Stewart, Marquise de Castellane, Etoile de Lyon, Marie Rady, Niphotos, Souvenir de Paul Neron, Princess of Wales, Camille Bernardin, Marie Finger, Madame Alphonse Lavallée, J. S. Mill, Souvenir d'un Ami, Jean Ducher, Duc de Rohan, Madame G. Luizet, Auguste Rigotard, Madame H. Jamain, a purple sport from Star of Waltham, Madame Cusin, Mrs. J. Laing, Catherine Mermet, Star of Waltham; Madame Eugène Verdier, and Innocente Pirola. The Tea scented varieties were particularly fine in this stand. Second, The English Flower and Fruit Company, Hereford, with large and striking flowers, damaged by the rain, the following particularly fine—A. K. Williams, Madame A. Lavallée, J. S. Mill, Alfred Colomb, Victor Hugo, Countess of Rosebery, Devonienne, Madame Isaac Pereire, a charming Bourbon variety; Fisher Holmes, Duchess of Bedford, Marie Van Houtte, Souvenir d'un Ami, Madame H. Jamain, Dupuy Jamain, Prince Arthur, Général Jacqueminot, Earl of Dufferin, Rosieriste Jacobs, Madame Berard, Mrs. Jowett, Marie Baumann, Maréchal Vaillant, Beauty of Waltham, and M. P. Wilder. Third, Mr. B. R. Cant, nurseryman, Colchester. With thirty-six varieties, three trusses of each, The English Fruit and Flower Company were first, staging excellent blooms of A. K. Williams, Lady Sheffield, Général Jacqueminot, S nateur Vaisse, Alfred Colomb, J. S. Mill, Auguste Rigotard, Ulrich Brunner, Queen of Queens, M. P. Wilder, Maurice Bernardin, Prince Arthur, Her Majesty, Beauty of Waltham, Dupuy Jamain, Mons. Berard, and Duke of Edinburgh. Second, Messrs. Prior & Co., Colchester. Third, Messrs. Paul & Son, Old Nurseries, Cheshunt.

In the class for eighteen Teas and Noisettes, three blooms of each, there was keen competition, Messrs. Harkness & Sons taking first prize with some superb blooms, having in very fine condition Catherine Mermet, Innocente Pirola, Souvenir d'un Ami, Souvenir de Paul Neyron, Anna Ollivier, Madame Willermoz, Caroline Kuster, Madame Bravy, David Pradel, Marie Van Houtte, Souvenir d'Elise Vardon, Jean Ducher, Niphotos, Madame Cusin, Madame Welch, Princess of Wales, The Bride and Rubens. Second, Mr. B. R. Cant with capital blooms of Marie Van Houtte, Madame de Watteville, Ehel Brownlow, Souvenir d'un Ami, Comtesse de Nadaillac, Madame Hoste, Souvenir d'Elise, Princess of Wales, Francisca Kruger, and Luciole. Third, The English Fruit and Flower Company. Mr. B. R. Cant had the best twelve blooms of Teas and Noisettes, comprising Comtesse de Nadaillac, Madame Cusin, Madame Lambard, Madame de Watteville, Catherine Mermet, Jean Ducher, Niphotos, Souvenir d'Elise, The Bride, Souvenir d'un Ami, Innocente Pirola, and Princess of Wales. Second, Mr. H. Merryweather, nurseryman, Southwell, also with some fine blooms, Messrs. Harkness & Son being third. The best twelve blooms of any yellow Rose were some fine ones of Francisca Kruger from the Cranston Co. Mr. B. R. Cant was second with Marie Van Houtte. The best twelve blooms of any white Rose were Niphotos from Messrs. Prior & Son, Colchester. Messrs. Harkness & Son were second with Merveille de Lyon. The best twelve blooms of any crimson Rose were superb examples of Alfred Colomb from the Cranston Co. Messrs. Paul & Son were second with A. K. Williams.

The class for three bouquets of Roses brought but one exhibitor, Messrs. Perkins & Son of Coventry, who were awarded the first prize for worthy examples of artistic skill. Amateurs' Roses had classes allotted to them. The Rev. J. H. Pemberton, Romford, was first with thirty-six distinct varieties, fine blooms being staged, but showing the effects of recent storms. Very fine were Marie Baumann, Auguste Rigotard, Souvenir d'Elise, Prince Arthur, Earl of Dufferin, Alfred Colomb, Marie Finger, Madame Victor Verdier, Louis Van Houtte, Ulrich Brunner, Comte Raimbaud, Lady Mary Fitzwilliam, La France, M. P. Wilder, Marie Rady, Merveille de Lyon, Beauty of Waltham, Innocente Pirola, Sir Rowland Hill, and Horace Vernet. Second, Mr. E. B. Lindsell, Hitchin, with Dupuy Jamain, Victor Hugo, Mons. E. Y. Teas, Marie Van Houtte, Louis Van Houtte, Alfred Colomb, La France, Ulrich Brunner, Dr. Andry, Mrs. J. Laing, A. K. Williams, Francisca Kruger, Marie Baumann, and Captain Christy, all in good condition. Third, the Rev. A. Foster-Melliar, Ipswich. Rev. J. H. Pemberton also had the best twelve varieties, three trusses of each, most noticeable being Ulrich Brunner, Duke of Wellington, Merveille de Lyon, Her Majesty, Baroness Rothschild, Auguste Rigotard, and Caroline Kuster. Mr. E. B. Lindsell, who was second, had good blooms of Mons. E. Y. Teas, Comtesse de Nadaillac, Catherine Mermet, Ulrich Brunner, and Lady Mary Fitzwilliam. Third, the Rev. A. Foster-Melliar. The Rev. T. R. Burnside, Hereford, had the best twelve Teas or Noisettes,

three blooms of each, having good examples of Madame Cusin, Hon. Edith Gifford, Innocente Pirola, Comtesse de Nadaillac, Francisca Kruger, The Bride, Souvenir d'un Ami, Princess of Wales, Souvenir d'Elise, Madame Bravy, Mons. Furtado, and Catherine Mermet. The Rev. J. H. Pemberton was second, having in good form Madame Thérèse Levet, so well coloured as to supply quite a startling hue among Teas; Princess of Wales, Souvenir d'un Ami, Madame Bravy, Niphotos, and Anna Olivier. The Rev. T. R. Burnside also had the best twelve Teas, single blooms, comprising Souvenir d'Elise, Catherine Mermet, Innocente Pirola, Princess of Wales, Hon. Edith Gifford, Madame Thérèse Levet, Caroline Kuster, Niphotos, Comtesse de Nadaillac, The Bride, Rubens and Francisca Kruger. Second, Mr. E. B. Lindsell, with Caroline Kuster, Francisca Kruger, Marie Van Houtte, Anna Ollivier, Souvenir d'Elise, Catherine Mermet, and Comtesse de Nadaillac. The Rev. J. H. Pemberton was third. There was no competition in the class for twelve trusses of any yellow Rose. In that for any white the Rev. T. R. Burnside was first with a very fine lot of Innocente Pirola. Mr. C. Burgess, Plumbley Cottage, Chester, was second, and Mr. Samuel Barlow, J.P., Stakehill House, third, both with Merveille de Lyon. The best twelve blooms of any crimson Rose were Ulrich Brunner, from the Rev. J. H. Pemberton, Mr. Samuel Barlow was second with Marie Bauman. Bouquets of Roses, the best three came from Mr. George Wilkes, gardener to Miss Lord, Ashton-on-Mersey.

DISTRICT GROWN ROSES.—There were some classes for these grown within twenty miles of Manchester. Mr. Tatham, Wilmslow, was first with twenty-four varieties, having fairly good flowers of A. K. Williams, Captain Christy, Marie Baumann, Duc de Rohan, Prince Arthur, Ulrich Brunner, Beauty of Waltham, Alfred Colomb, La France, Madame I. Pereire, Lord Bacon, and M. P. Wilder. Second, Mr. James Brown, Heaton Nursery. Mr. Brown had the best twelve blooms. Mr. Tatham was second. Mr. C. Burgess had the best six, staging perhaps the finest bloom of Her Majesty in the Show. Mr. R. G. Burgess was second, and the latter had the best bouquet of Roses.

EXTRA PRIZES were awarded to Mr. Samuel Barlow for a collection of cut blooms of perennials, annuals, garden Roses, all of a fine and interesting character; and also for a large flowering spike of *Phormium tenax variegata*, which had been produced in the open ground at his Welsh residence at Llandulno; to Messrs. Dickson & Robinson, seedsmen, Manchester, for a fine lot of blooms of Carnations, hardy perennials, Roses, &c.; to Messrs. Dickson, Brown, & Tait, seedsmen, Manchester, for Roses, hardy perennials, &c., a very attractive group; to Messrs. Clibran & Son for a collection of flowers of very fine single Begonias and Clematis, also for Calceolarias in pots; to Messrs. Dickson (Limited), Chester, for fine bunches of hardy perennials, &c.; to Mr. M. Campbell, Blantyre, for a very fine and representative collection of cut flowers of Pansies, especially of Fancy varieties; and to Mr. Henry Eckford, for a collection of bunches of cut blooms of Sweet Peas.

A first-class certificate of merit was awarded to Messrs. Paul & Son for Bourbon Rose Mrs. Paul. A new H.P. named Bruce Findlay, a kind of deep shaded A. K. Williams, is of a very promising character, but was not staged in good condition.

NATIONAL PINK SOCIETY. NORTHERN SECTION.

THE Pink Show, held in connection with the Manchester Rose Exhibition, was a decided success when it is considered the area of cultivation in the north as well as in the south has become very restricted of late. There were two exhibitors of twelve blooms in not less than six varieties. Mr. M. Campbell, Auchinraith Nurseries, Blantyre, was first with Modesty, very fine; Ada Louisa, Dr. Maclean, Nothing Better, a fine dark variety; Boiard, Reliance, D. Godfrey, and John Drake, with a finely formed petal. Second, Mr. Samuel Barlow, J.P., Stakehill House, Castleton, with Boiard, very fine; George Hodgkinson, Brown's Heavy Red, Mrs. Thurston, Henry Hooper, Mrs. Darke, and Rosy Morn. There were five stands of six varieties, distinct. Mr. Samuel Barlow was first with Boiard, Mrs. Darke, Brown's Heavy Red, George Hodgkinson, James Thurston, and one unnamed. Mr. T. Lord, Hole Bottom Tadmorden, was second with Boiard, Rosy Morn, Modesty, Bertram, Mrs. Darke, and Eurydice. Third, Mr. Campbell. In the class for six blooms, not less than three varieties, Mr. Samuel Barlow was first with two blooms each, Mrs. Darke and Brown's Heavy Red, Boiard, and one unnamed. Mr. F. Morton, Wolverhampton, was second with two blooms of George Hodgkinson, Boiard, Henry Hooper, Mrs. Darke, and Clipper. In the class for three blooms, one purple laced, one red laced, and one black-and-white, there was no competition. A goodly number of blooms were staged in the classes for the best purple and the best red laced Pinks. In the former class Mr. Samuel Barlow took all the prizes, being first, second, and fourth with Boiard, third with Henry Hooper, and fifth with George Hodgkinson. In the class for red laced flowers Mr. T. Lord was first and second with Bertram, and fourth with Modesty; Mr. S. Barlow third and fifth with Mrs. Darke. The premier purple laced Pink was Boiard, shown by Mr. S. Barlow; and the best red laced, Modesty, shown by Mr. Campbell.

The best collection of miscellaneous Pinks of all types came from Mr. Thomas Walkenden, Moor-side Nursery, Sale, who had an excellent collection of bunches, comprising, of laced varieties, Progress, Emmeline, and seedlings; white border Pinks, William Brownhill, Mrs. Sinkins, Fimbriata alba, and seedlings; and of coloured varieties, Souvenir de Sale, deep pink, and some good unnamed seedlings. Mr. Samuel Barlow was second with neat bunches of George Hodgkinson, Mrs. Darke,

Boiard, Mrs. Thurston, Frank Simonite, and others; the common white border Pink, Lakin's Seedlings, and mule Pink, Napoleon III.

Certificates of merit were awarded to Mr. Thomas Walkenden for Pinks Souvenir de Sale, Linley, Walkenden, white, delicately tinted with pink in the centre; Progress, white, with pink lacing; and William Brownhill, pure white; all very desirable acquisitions to the class of border Pinks.

FINE STRAWBERRIES.

OF the two Strawberries figured one is quite new and the other not so widely known as it will be a few years hence.

COMPETITOR (fig. 14) is Mr. Laxton's latest production, one of

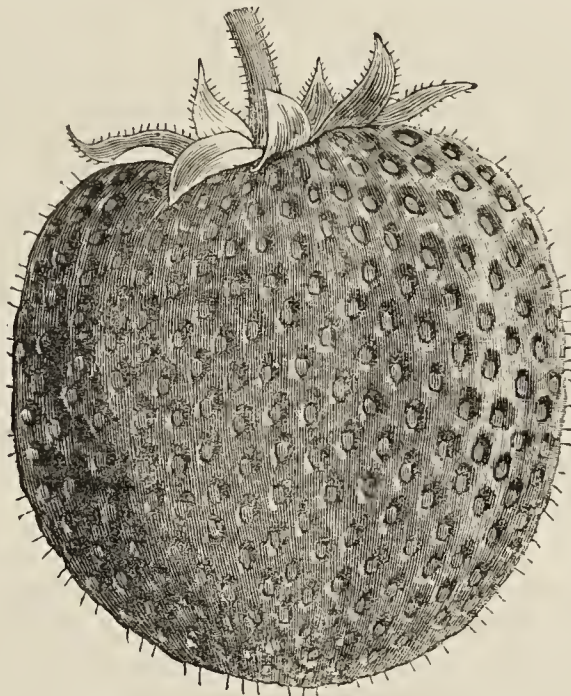


FIG. 14.—LAXTON'S COMPETITOR.

his largest, and he esteems it one of his best. As seen growing at Bedford early in the month it appeared to be quite as free as Noble, the fruits as large, practically as early, and better in quality. It is the result of a cross between an American Strawberry, Kerr's Prolific, and Forman's Excelsior. The fruit is high in colour, and the variety will probably be tested with Noble by many cultivators.

WATERLOO (fig. 15) is a highly distinct Strawberry, and its value is enhanced by its lateness in ripening. As seen at Chiswick, and in Mr. Smee's garden at Hackbridge, this variety may be fairly regarded as the most useful of all the late sorts. Most late Strawberries are the reverse of free bearers, but Waterloo is productive. After all others were over in both the gardens named, basketfuls of the large mulberry coloured fruits of Waterloo could be gathered in a few minutes. The fruit shown is not one of the largest, but girthed 6½ inches. It was grown at Chiswick, but not

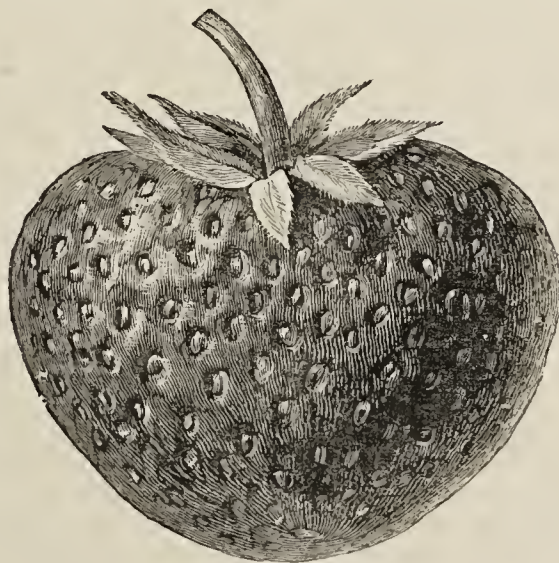


FIG. 15.—WATERLOC.

weighed. Mr. Cummins has gathered from the ordinary crop, without any thinning, a fruit weighing 2½ ozs., and many approaching that weight.

In quality Waterloo is sweet with a sub-acid taste, and acceptable to many palates. It is better than either Eleanor or Elton Pine, more prolific than either, and the crop from one row of Waterloo would realise twice the money that could be obtained

from a row each of both, if all were cropping at their best and the fruit sold. The highest price obtained for outdoor grown Strawberries at Chiswick was half a crown a pound for fine fruits of Waterloo, smaller samples falling to 1s. 6d. Its size and extremely dark colour find favour with novelty seekers. At Hackbridge this week we observed Waterloo in full bearing, all others having ceased for some time. Noble was gathered in June, Waterloo is hoped and expected to continue till August 8th.

In habit the plant is compact, forming tufts of smallish dark leaves, which do not shade the fruit. The plants may be very well grown 18 inches apart in rows 2 feet asunder. They do not appear to produce runners very freely, and this will affect the price. Waterloo, like some other Strawberries, may not flourish in all soils, but is worth trying by all growers who desire large, dark coloured, late fruit. At Chiswick the soil is rather heavy, at Hackbridge light in texture, dark in colour, a humus like mass, and in both gardens the plants yield handsome fruit freely.

Mr. Barron informs us that this Strawberry was brought from France by Mr. James Bone, gardener to Lord Chesham, Latimers, and passed from him to Messrs. Veitch & Sons, and thence to Chiswick. It was grown in France, as might be expected, under another name, but Mr. Bone arriving home on the Waterloo anniversary commemorated the event by giving to this French Strawberry the famous Belgian name, which it will bear as long as the variety is grown in British soil.

THE WILD FRUITS OF NEWFOUNDLAND AND LABRADOR.

(Concluded from page 514).

THE Honeysuckle family (Caprifoliaceæ) brings to our notice three genera, the *Lonicera* or Honeysuckle genus, the *Viburnum*, Arrow-wood or *Laurustinus* genus, and that of the *Sambucus* or Elder. The *Lonicera* or Honeysuckle gives us the Mountain or blue-fruited Fly Honeysuckle (*L. coerulea*), and its variety *villosa*, and the Swamp Fly Honeysuckle (*L. oblongifolia*). Both have yellowish flowers; the berries of the former are blue, those of the latter are purple. The *Viburnum*, Arrow-wood, or *Laurustinus* has probably five species in Newfoundland, and amongst them are the Squashberry, and, I believe, our Withe-rod and White-wood berries. The others are the Sweet *Viburnum* or Sheepberry (*V. Lantago*), the Withe-rod and Naked-stalked *Viburnum* (*V. nudum*), the Few-flowered Arrow-wood (*V. pauciflorum*), and the Maple-leaved *Viburnum* or Dockmackie (*V. acerifolium*). Our Squashberry is not the High Cranberry (*Viburnum Opulus*), as at first thought, but the Few-flowered *Viburnum*. Our Withe-rod is probably the *V. nudum*; and our White Wood, whose berries are much like the Squashberry, is, perhaps, the *V. Opulus*. The *Sambucus* or Elder family gives us the panicled or red-berried Elder (*Sambucus racemosa*, variety *pubens*). The *V. Opulus* is the only one, it would seem, of these fruits which grows wild in England; it is known there as the common Guelder Rose or Water Elder.

The Madder family (Rubiaceæ) gives us the *Mitchella* or Partridgeberry genus, of which the sole species is the *M. repens*. It is remarkably distinguished by its bright red berries, formed of two flowers.

The Heath family (Rubiaceæ).—The genera or divisions of this large and important family of which we are to speak are those of the Huckleberry, Whortleberry, Creeping Snowberry, Cranberry, Partridgeberry, and Bearberry. It thus yields us a large proportion of our most common and valuable fruits. The Huckleberry or *Gaylussacia* affords us, I believe, our "black hurts" or whorts. They are of two kinds—the black or common Huckleberry (*G. resinosa*), and the dwarf Huckleberry (*G. dumosa*). The Whortleberry or *Vaccinium*.—This gives us our "hurts" or Whortleberries properly so called, and our Partridgeberry. The former are also called Blueberries or Bilberries. There are in Newfoundland five kinds of Whorts, with one variety, besides the red Whortleberry, Cowberry or Mountain Cranberry (*V. Vitis Idæa*), which is our Partridgeberry. They are the common Low Blueberry (*V. pennsylvanicum*), its variety *angustifolium*, the Blue or High Bilberry (*Vaccinium corymbosum*), Canadian Blueberry (*V. canadense*), the Mountain Blueberry (*V. uliginosum*), and the Dwarf Blueberry (*V. cæspitosum*). The last two are dwarf species, and may both be "ground hurts." The High Bilberry grows from 4 to 8 feet in height; the others are from 6 to 12 inches high, the dwarf species being still smaller. Of these the Mountain Blueberry and the Cowberry are the only ones of our Whorts found in England.

The Cranberry or *Oxycoccus*.—In very close botanical connection with the Whortleberries, so that they are, or were, sometimes grouped with them, are two others of our berries, one of which is very common and much valued by us. These are the Cranberries. Our Mashberry appears to be the common or small Cranberry of America, and the Marsh Whortleberry or Cranberry of England (*Oxycoccus vulgaris*). Our less frequent Cranberry, which bears large berries, and has its flower-stalk (or pedicels) springing from the juncture of the leaf and stem (or axillary) is the larger Cranberry (*O. macrocarpus*). Probably the latter is what is sometimes called the Bearberry and Bankberry in Fortune Bay and elsewhere. The Creeping Snowberry or *Chiogenes*.—Another delicate and much appreciated berry is claimed by the Heath

tribe, and that is the Capillaire or Maidenhairberry (*Chiogenes hispida*). It is called in other parts of North America the Mountain Boxberry, or Creeping Snowberry. The Aromatic Wintergreen or *Gualteria*. In this division we find the Checkerberry, Aromatic Wintergreen, Boxberry, or, as it called in some parts of North America, the Partridgeberry and Teaberry. About Harbor Breton it is called the Mountain Tea. The Bearberry or *Arctostaphylos*.—The red Bearberry or *Kinnikinnik* (*A. uva ursi*), and the black or alpine Bearberry (*A. alpina*) are both found here; the names indicate the colour of the berries. The former is known as the Rockberry, and possibly Foxberry and Ground Ivoryberry in Fortune Bay. Both these exist in England; and the larger English species, the Strawberry Tree (*A. unedo*) is also stated to have been identified here; but as it does not appear to be known in North America, we may conclude it is a mistake.

The Holly family (Aquifoliaceæ).—In its Mountain Holly or *Nemopanthes* we have the Canadian or Mountain Holly (*Nemopanthes canadensis*), a shrub bearing dry red berries and small greenish-white flowers, called in Fortune Bay, I believe, Brick Timber and Catberry. The Mezereum family (Thymelæaceæ).—Here we find in the Leatherwood or *Dirca* the Leatherwood or Moosewood (*D. palustris*). The Oleaster family (Elaeagnaceæ).—In *Shepherdia* we find the Canadian *Shepherdia* (*S. canadensis*). The Sandlewood family (Santalaceæ) brings us to the Bastard Toad Flax or *Commandra*, with its two species, the *C. umbellata* and *C. livida*. The Crowberry family (Empetraceæ) has two genera. The Crowberry or *Empetrum*, which affords us our so-called "Blackerry" or Heathberry or Earthberry, which is properly the common or black Crowberry (*E. nigrum*). It is common in England. A red Crowberry (*E. rubrum*), which has red berries, is found in Miquelon, Sagona, Brunet, Long Harbor, Fortune Bay, and other places westward. The Broom Crowberry or *Corema* gives us the Broom or Plymouth Crowberry (*C. Conradi*).

The Oak family (Cupuliferæ) in its Hazlenut or *Corylus* affords us our two Newfoundland nuts, the Beaked Hazel (*Corylus rostrata*) and the Wild Hazel (*C. americana*). The latter is very similar to the common English Hazel (*C. avellana*). The Sweet Gale family (Myricaceæ).—Here we have, in the Sweet Gale or *Myrica*, two plants—the Dutch Myrtle or Sweet Gale (*Myrica Gale*), and the Wax Myrtle or Bayberry (*M. cerifera*). The former is found abundantly in England.

The Pine family (Coniferæ).—Two divisions here interest us—namely, the Juniper and Yew genera. (a) The Juniper (*Juniperus*).—The Junipers of Newfoundland appear to be three in number—namely, the common Juniper (*Juniperus communis*), the red Cedar (*J. virginiana*), and the creeping Juniper (*J. sabina*, variety *procumbens*). The berries of the latter it seems are called here the "face and eye berries," from their resemblance to the human countenance. They are much in request by our "grannies" for their "sick" women. Our so-called Juniper tree belongs to a different genus of this family, and is the Tamarack or black Larch (*Larix americana*). The common Juniper is of frequent occurrence in England. It is here called Common Low or Ground Juniper, to distinguish it from the Larch, or high Juniper; and the creeping Juniper is known as "Savine." (b) The Yew or *Taxus* genus.—We have here the only North American species—namely, the ground, or American, or ground Hemlock Yew (*Taxus baccata*, var. *canadensis*). It grows in some few places in the north of England. It is probably our "Palm."

The Greenbriar family (Smilacæ).—The only genus of the order is that of the Greenbriar or *Smilax* genus. Here we have two species, which have bluish-black berries. They are the common green Briar (*Smilax rotundifolia*) and the Carrion Flower (*S. herbacea*). The medicinal Sarsaparilla (*S. sarsaparilla*), said to be found here, is not known on this side of the Atlantic.

The Lily family (Liliacæ) gives us five genera to speak of. The three-leaved Nightshade or *Trillium*, which has two species, the *T. recurvatum* and the *T. erythrocarpum*, the Smiling Wake Robin or Painted Herb or *Trillium*. The False Solomon's Seal or *Smilax*, which gives us the two-leaved Solomon's Seal (*S. bifolia*) and the three-leaved Solomon's Seal (*S. trifolia*). Both these have bright red berries, and are perhaps known here as "scurvy berries," the Star-flowered Solomon's Seal or False Spikenard (*S. stellata*), with blackish berries; and the clustered Solomon's Seal (*S. racemosa*), having pale red speckled berries. The True Solomon's Seal or *Polygonatum*, in which we have only the smaller Solomon's Seal (*P. biflorum*), probably a variety *pubescens*. This has round blue or black berries. The *Clintonia* (*Clintonia*), where we have the wild Lily of the Valley (*C. borealis*), which has large yellow flowers and bright blue berries, called here "poison berries." The Twisted Stalk or *Streptopus*, in which we have the rose twisted stalk (*S. roseus*), and another species called the *S. amplexifolius*. Both have red berries.

ROYAL AQUARIUM, WESTMINSTER.

THE Exhibition held on Tuesday and Wednesday, July 29th and 30th, was the fifth of the series under the management of Mr. W. Holmes, and it was certainly one of the best in all respects. There was a great variety of exhibits, the quality was good throughout, and the floral display was rendered brilliant by the Tuberous Begonias.

CARNATIONS AND PICOTEES.

In quality and numbers these were far better than was expected, indeed in some points they were superior to those at the National Society's Show. We can only briefly review the classes.

With twenty-four blooms, bizarres and flakes, Mr. J. Douglas, gardener to Mrs. Whitbourn, Great Gearies, Ilford, was first, showing large bright blooms, including several seedlings and the following named varieties:—Rob Roy, Arthur Medhurst, Thalia, Alismond, Edward Adams, Matador, and Robert Houlgrave. Mr. Martin Rowan, 36, Manor Street, Clapham, was second; and Mr. C. Turner, Slough, third. Mr. M. Rowan gained first prize for twelve Carnations, distinct, fresh, bright, clean blooms of Jessica, Alfred, Sarah Payne, Rifleman, Rob Roy, Fred, Matador, G. Melville, Gordon Lewis, Robert Houlgrave, Mrs. Skirving, and Sportsman. Messrs. Douglas, Turner, and Phillips followed in that order as second, third, and fourth prizewinner. Six competitors. Amongst twelve exhibitors of six Carnations, distinct, Mr. J. F. Kew, London Road, Southend, took the lead, showing grand examples of George, Thalia, Mayor of Notts, R. Dean, and two seedlings. Messrs. Sydenham, Anstiss, and Lakin were second, third, and fourth.

Bouquets of Carnations were exhibited by eight competitors. Mr. E. Chadwick, gardener to E. M. Nelson, Esq., Hanger Hill House, Ealing, was first for a light and tasteful arrangement. Mr. Chard, Stoke Newington, was second, Mr. Lakin third, and Mr. Fred Hooper, Bath, fourth. A class was provided for a vase or epergne of Carnations and foliage, and several very tasteful arrangements were shown. Mr. E. Chadwick took the lead, yellow, white, and light-coloured Carnations and Picotees with grasses being chiefly employed. Mr. J. Chard was second with a tall epergne of Carnations and Grasses. Mr. J. Douglas was third, and Mr. D. B. Crane fourth.

The best twenty-four Picotees came from Mr. C. Turner, who had clean fresh blooms of Favourite, Dr. Epps, John Archer, T. B. Bryant, Madeline, Mrs. Chancellor, Lord Valentine, Mrs. Sharpe, Edith D'Ombrian, and several seedlings. Mr. J. Douglas followed in the second place, Mr. M. Rowan was third, and Mr. F. Hooper fourth. With twelve Picotees there were eight competitors, Mr. C. Turner winning premier honours for excellent examples of Mrs. Payne, Madeline, John Smith, Mrs. Sharpe, Mrs. Gorton, Mrs. Chancellor, Favourite, and Princess of Wales, and several seedlings. Mr. J. Douglas, Mr. M. Rowan, and Mr. Headland, Leyton, were second, third, and fourth respectively. The competition was keen with six Picotees, fourteen entering. Mr. F. Hooper won the first prize for capital blooms of T. B. Bryant, Favourite, Dr. Epps, and seedlings. Mr. J. Lakin followed. Mr. Startup, Bromley, was third, and Mr. H. J. Sanders, Bookham Lodge Gardens, Cobham, was fourth.

In the class for twenty-four self or fancy Carnations and Picotees Mr. C. Turner was successful in securing the leading prize for varied, bright, and beautiful blooms of the following:—Almira, Ruby, Romulus, Mrs. R. Hole, Victory, Robert Houlgrave, Thos. Page, Dorothy, Germania, Terra Cotta, Dorothy, King of Yellows, Lord Rendlesham, and Victory. Mr. J. Douglas was second, Mr. W. Toby third, also with a good stand, and Mr. F. Hooper fourth. Mr. C. Turner had the best twelve self and fancy Carnations, showing Romulus, Lord Rendlesham, Ruby, Germania, Janira, Rose Celestial, Mrs. R. Hole, Terra Cotta, Almira, and Victory. A beautiful bright collection. Mr. M. Rowan was a good second with not quite so much variety. Mr. Chaundy, Oxford, was third, and Mr. T. Anstiss fourth. Mr. Anstiss took the lead with six self or fancy Carnations and Picotees, showing Mrs. R. Hole and several seedlings. Mr. Wm. E. Walker, Reading, was second; Mr. F. Nutt, Southampton, third; and Mr. A. J. Sanders fourth out of eleven competitors.

For six yellow self Carnations and Picotees Mr. Turner was first with Germania, Wm. Harding, and seedlings; Mr. F. Hooper followed also with seedlings. Yellow ground Picotees were shown by eight exhibitors. Mr. Turner led with six, all seedlings except Agnes Chambers; Mr. C. Phillips was second, Mr. Chaundy third, and Mr. F. Hooper fourth.

Classes were also provided for single specimens, but we failed to secure the whole of the awards.

TUBEROUS BEGONIAS.

The class for a group of Tuberous Begonias arranged for effect in a space of 100 square feet, with Ferns and foliage plants, excited much interest, though there were only two competitors, but it was generally understood that the contest would rest between the noted cultivators and raisers of Tuberous Begonias at Forest Hill and Swanley. The two groups staged were extremely brilliant displays of single and double varieties, but after a careful consideration the premier award was adjudged to Messrs. Laing & Sons for an effective and tastefully arranged group, the varieties of good quality, and the colours judiciously associated. Messrs. H. Cannell & Sons' group was not quite so freely arranged, and the plants were dwarfer, but included a preponderance of handsome double varieties.

In the other classes for Tuberous Begonias—namely, for six white, six pink or rose, six yellow, six crimson or scarlet, twelve doubles, and twelve singles, Messrs. Laing & Sons were the only exhibitors, securing the first prize in each with handsome specimen plants of good varieties, the six collections filling a large table at one end of the building.

MISCELLANEOUS.

The non-competing groups were very numerous, and added greatly to the extent and beauty of the Show.

Messrs. James Veitch & Sons, Chelsea, contributed a handsome collection of tuberous Begonia flowers, from outdoors, Begonia Worthiana being very notable for its bright scarlet flowers. Four large boxes of Carnations and Picotees were also shown by the same firm. Messrs. John Peed & Sons, Norwood Road, had two beautiful groups of Gloxinias,

effectively arranged with Adiantums (silver medal). Messrs. Dobbie and Co., Rothesay, sent a large collection of Pansy and Viola flowers.

Mr. W. Stacey, nurseryman, Dunmow, exhibited three stands of Verbenas, including fine trusses of about three dozen varieties, admirable in form and colour of flowers. Mr. H. J. Jones, Hither Green, Lewisham, had a group of well-fruited Tomato plants and several dishes of fruits representing The Conference and Peach varieties. Mr. H. W. Edwards, Stamford, also exhibited Tomato fruits. Mr. T. S. Ware, Tottenham, had first prize for a collection of Gaillardias.

Mr. C. Turner, Slough, showed eight boxes of excellent Roses. Roses were also well shown by the Rev. J. H. Pemberton, Havering, Essex, and Mr. Will Taylor, Hampton. Mr. E. F. Such, Maidenhead, contributed a capital group of hardy flowers. Messrs. D. Prior & Son, Colchester, sent seventeen boxes of Rose blooms representing many varieties. Messrs. Paul & Son, Cheshunt, sent twenty-four boxes of extremely beautiful Roses. Mr. Wm. Rumsey, Waltham Cross, had ten boxes of good Roses. Messrs. Ryder & Son, Sale, sent an extensive group of hardy flowers. Mr. C. Turner was first for a collection of eighteen bunches of Carnations and Picotees. Mr. H. Eckford, Wem, Salop, had a stand of Sweet Peas most varied in colour, soft, delicate and bright shades being numerous. Certificates were awarded for Orange Prince, Primrose, and Ignea. Messrs. J. Laing & Son had a large collection of seedling Carnations and hardy flowers arranged on stands with foliage.

Messrs. Paul & Son showed a large and varied collection of hardy flowers, very conspicuous being the bright scarlet and white double Bichon Poppy. Mr. T. S. Ware, Tottenham, had a large collection of hardy flowers. Messrs. Barr & Son, King Street, Covent Garden, also had an extensive group of hardy flowers. Messrs. Fellows & Ryder, Orpington, sent eighteen dishes of fine Tomato fruits.

Six fine Melons were shown by Mr. W. G. Gilbert. Mr. G. Mortimer, Farnham, had a certificate for a new Cucumber named Express, fine even fruits. It was obtained by a cross between Purley Park Hero and Tender and True.

HORTICULTURAL SHOWS.

BEDFORD AND BEDFORDSHIRE SOCIETY.

THE seventh annual Show was held at Bedford on Thursday last week, and as cut Roses are usually a material feature of the Show the clash with Birmingham considerably reduced the exhibits, the recently unsettled weather also doubtless militating against the number of the exhibits generally, for, with a few exceptions, notably in the open class for cut herbaceous and bulbous flowers, there was a considerable falling off in comparison with the shows of previous years. For forty-eight cut Roses in the open class Messrs. G. & W. H. Burch of Peterborough had the best stand, their blooms being both fine, clean, and in good colour, the bloom of Her Majesty being probably the finest Rose in the Show, the flowers also of Mdlle. Eugénie Verdier, Antoine Ducher, Merveille de Lyon, Chas. Darwin, Catherine Mermet, Etienne Levet, Marie Rady, Mrs. J. Laing, Marie Van Houtte, Innocente Pirola, Madame V. Verdier, Horace Vernet, and Niphotos were also conspicuously good and in character. Messrs. Burch took first and Messrs. J. Burrell and Co., Cambridge, second with blooms of good substance but somewhat smaller. Sir Rowland Hill, Susanne Marie Rodocanachi and Souvenir d'Elise Vardon were especially good. Mr. W. H. Frettingham, Beeston, Notts, was third, having fine flowers of Duchess of Bedford, Duke of Connaught, Duke of Teck, Jules Finger, Dupuy Jamain and Alfred Colomb. There were six exhibits altogether in this class. In the open class for twenty-four cut blooms, open to all amateurs, the Rev. W. H. Jackson, Stagsden Vicarage, Bedford, put up a very brilliant stand, all his flowers being remarkably fresh, clean, and of good size, and as a consequence the local champion, Mr. E. B. Lindsell of Hitchin, had to succumb on this occasion, his strength being probably concentrated in the national tournament at Birmingham; however, a better stand has rarely been seen than Mr. Jackson's twenty-four, and he was deservedly placed first, his principal flowers being Ulrich Brunner, François Michelin, Marie Rady, Horace Vernet, Marie Finger, La France, Chas. Lefebvre, Marie Verdier, Dupuy Jamain, Countess of Oxford, Her Majesty, Etienne Levet, Camille Bernardin, Dr. Andry, Madame V. Verdier. For the twelve blooms in the same division Mr. Lindsell took first, Mr. G. Moules, Hitchin, second, and Mr. Jackson third.

In the Tea classes for eighteen, open to all England, Messrs. Burrell were first, Messrs. Burch second, and Mr. J. Mattock, Oxford, third. For twelve Teas, amateurs, open, Mr. Lindsell led, closely followed by Mr. G. Moules, who had Comtesse de Nadaillac and two or three other flowers of the first standard, scarcely excelled by any others in the Show. For twelve Roses, open to all amateurs, Mrs. L. E. Times, Hitchin, was first, Miss Bailey, Denton, Stevenage, second, and Mr. Moules third.

In the local class for Roses, open to amateurs, for twenty-four blooms, not less than eighteen varieties, Mr. Jackson was again first, and Mr. J. T. Green, Bletsoe, Beds, second; and for twelve blooms, Mr. C. Ellis, gardener to Mrs. Orr, Pemberly, Bedford, was first; Mr. G. Dyer, gardener to G. Repton, Esq., Odell Castle, Beds, second; and Mr. E. T. Leeds Smith, Sandy, third; and for twelve Teas Mr. Jackson was first.

In the class for thirty-six bunches of cut hardy herbaceous or bulbous flowers a very effective display was made, there being eight exhibits occupying the whole of one side of the tent, and as these were very attractively set up and massed, the class proved very attractive. Messrs. Burrell & Co. had large masses of glowing flowers, chiefly Centaureas, Lilliums, Oenotheras, Catananche, Delphiniums, &c., the old Lychnis

chalcidonica fl. pl., perhaps having never been seen to better advantage; and *Oenothera speciosa*, *Campanula pelviformis*, and *Scabiosa caucasica* were very striking. Messrs. Paul & Son, Cheshunt, had a very choice but less effective display. Mr. Jas. Sheppard, Bedford, third, and Messrs. Horton & Smart, Bedford, fourth. Neither plants nor fruits were well represented, Mr. Ellis being first for a group of plants, and Mr. Day, gardener to Joshua Hawkins, Esq., Bedford, second, and Mr. Robinson, gardener to Frederick Howard, Esq., Bedford, third.

Mr. G. Allis, gardener to Major Shuttleworth, Old Warden Park, was first for Black Hamburg and Buckland Sweetwater Grapes, and Mr. Day secured a first prize for a collection of fruit, six kinds, and Mr. T. Bradshaw, Houghton Regis, had the best three varieties of Strawberries, consisting of Sir Jos. Paxton, Forman's Excelsior, and Lucas, all in fine condition. Mr. C. Musgrove, gardener to A. D. Chapman, Esq., Milton Ernest, Beds, was first for a fine collection of vegetables; Mr. Ellis second, and Mr. Herman, gardener to Griffith Jones, Esq., Goldington Bury, third. Mr. Herman also staged six well grown Zonal Pelargoniums, for which he was deservedly awarded the first place, and Mr. Musgrove for Coleus and Petunias. Mr. Sheppard contributed, not for competition, a very extensive and choice collection of plants, and Messrs. Laxton Bros., Bedford, a splendid collection of Sweet Peas, of Mr. T. Laxton's well-known strains. Cut flowers, Roses, and a large and very tastefully made wreath of light buff Roses, chiefly *Rêve d'Or*, and a magnificent crop of white flowers. Vegetables and cut flowers were well shown in the amateurs' classes, Captain Verey, Bedford, taking the lead for a collection of vegetables, and Mr. W. Kingston, Bedford, for a collection of Peas, Autocrat being especially noticeable and shown in beautiful colour and bloom. The cottagers' productions were extensive and good, filling a large tent. For the best bouquet Miss E. M. Blake, Bedford was first, and Miss Blake for three sprays and three buttonholes, Miss M. T. Goffrey, Bedford, securing first for an effective table decoration.

LEEDS.

A FEW years ago very large horticultural exhibitions were held in this rich and populous Yorkshire town; but year after year rain fell in torrents, and the shows were eventually washed away. Rainy days for the shows became so proverbial that on the dates being announced macintoshes and umbrellas were advertised for the occasion by enterprising tradesmen. A Show of a smaller kind was provided last week, and expressions of surprise were heard on all sides that the weather was favourable for visitors. The display consisted chiefly of Roses, cut flowers, and fruit, though interesting miscellaneous collections of plants were contributed by Messrs. Dicksons, Limited, Chester; Smith & Co., Worcester; and Featherstone, Leeds; this latter skilled decorative florist arranging the plants so artistically that the centre of the tent resembled a tropical garden. The competing exhibits were arranged on tables round the sides.

The only open class in Roses was for forty-eight varieties, and very good collections indeed were staged by five competitors. The Fruit and Flower Company, Hereford (Cranston's, Limited) secured the first prize in close competition with finer blooms than they had previously cut this year, and certainly ranking amongst the best that we have seen exhibited. The varieties comprised Alfred Colomb, Countess of Rosebery, A. K. Williams, Comtesse de Serenye, Dupuy Jamain, Lady M. Fitzwilliam, Earl of Dufferin, Madame Eugène Verdier, Devienne Lamy, Mrs. J. Laing, Général Jacqueminot, Silver Queen, Duc de Wellington, François Michelin, Marshall Wilder, Her Majesty, Lady Sheffield, François Louvat, Niphotos, Senateur Vaisse, Souvenir d'Elise, Camille Bernardin, Queen of Queens, Marie Van Houtte, Etienne Levet, Maurice Bernardin, Comte de Nadaillac, Benêt Comte, La France, Madame Ch. Wood, Maréchal Niel, Maréchal Vaillant, Thos. Mill, Baronne de Rothschild, Madame A. Lavallée, The Bride, Madame Victor Verdier, Souvenir de Paul Neyron, Mrs. Jowitt, Ulrich Brunner, Fisher Holmes, Perle des Jardins, Marie Baumann, Madame Bravy, Le Havre, Madame G. Luizet, Charles Lefebvre, and Auguste Rigotard. Nearly all of them were full, fresh, and beautiful, Lady Sheffield being perhaps the premier in the collection. Messrs. C. & W. H. Burch, Peterborough, very closely followed, and well won the second position with extremely bright young blooms, but rather small. Mr. J. House, Peterborough, was third with very good stands. Several stands were exhibited not for competition, and amongst them one of Madame George Bruant (Hybrid rugosa) from Messrs. Dicksons, and the large clusters of white flowers found many admirers.

For twelve bunches of hardy perennials the first prize was won by Messrs. Dicksons, Limited, with splendid bunches of Phlox A. Matheson; Lilioms Bloomerianum, longiflorum and testacum; Gladioli delicatissima and Prince of Wales; Delphinium ranunculiflorum, Agrostemma Waleri; Cimicifuga racemosa, Helenium pumilum, Gaillardia grandiflora, and Carnation Mrs. Reynolds Hole. Mr. J. Riddell, gardener to the Earl of Carlisle, Castle Howard, was second with one of the best stands we have seen from a private garden. The chief prizes for bouquets were won by Messrs. Perkins & Son, Coventry.

FRUIT was well represented by several good cultivators. Mr. R. Dawes, gardener to Mr. Meynell Ingram, Temple Newsam, secured the foremost place with six dishes—namely, a Pine, Gros Colman and Foster's Seedling Grapes, Peaches, Figs, and a Melon, all excellent. Mr. W. Wallis, gardener to Sir Meysey Thompson, Bart., Kirby Hall, Leeds, was second with very good produce, and Mr. F. Hare, gardener to R. H. C. Neville, Esq., Wellingore, Lincoln, third with a creditable collection.

In the class for two bunches of black Grapes Mr. G. Anderson, gardener to A. Milnthorpe, Esq., Tower Hill, Cattal, York, outdistanced

his competitors with fine Black Hamburgs, large in bunch and berries. Mr. J. Johnson, Boston Spa, was second with smaller but well finished bunches of the same variety, and Mr. Dawes third with Madresfield Court, large berries but not ripe, and injured in transit. With two bunches of white Grapes Mr. Anderson was first with large but not quite finished Muscats, Mr. Dawes second with well finished but small Buckland Sweetwater, and Mr. Hare third with fine bunches of Foster's Seedling, but apparently scarcely ripe. In the large bunch class Mr. Dawes secured the first prize with Muscat Hamburg unthinned, weighing 3 lbs. 14 ozs. Mr. Anderson followed with Black Hamburg, weighing 3 lbs. 7 ozs., the berries large and good.

Very good Peaches were staged, the first prize for two dishes going to Mr. R. Harburn, gardener to A. Kitson, Esq., Roundhay, Leeds, varieties Royal George and Noblesse, Mr. Dawes following closely with Bellegarde and Noblesse. He was easily first with Nectarines, Stanwick Elruge and Violette Hâtive; also with Figs, Negro Largo. Mr. Riddell won the first prize for Tomatoes, with splendid fruits of Perfection; and Messrs. Quartier & Co., Fordingbridge (gardener, Mr. S. Castle) exhibited remarkably fine specimens not for competition. Mr. Riddell staged by far the best Melons, and Mr. Harburn had the best Cucumbers, Lockie's Perfection.

It should be added that the Show was held in connection with the International Exhibition in the Carlton Parade Ground. The space occupied is five acres. Articles of all kinds, useful and ornamental, are represented, and the manager, Mr. Joseph Davis, also provides high class music and entertainments for visitors. Mr. Davis was a great exhibitor of meteorological and other instruments at South Kensington a few years ago, and he is to be congratulated on this Exhibition at Leeds. The Horticultural Show was managed by Mr. J. H. Clark, many years Secretary of the Leeds Horticultural Society, and he achieved a gratifying success. The Exhibition was attended by thousands of visitors.



FRUIT FORCING.

VINES.—*Vines in Pots for Early Forcing.*—Those that are to be started in November should now have the wood ripe, thoroughly hardened, and the buds plump; if not, and they are later than usual, keep the house rather warmer by day, 80° to 85°, closing early, so as to raise the temperature to 90° or 95°, and open the ventilators at night. Afford water in sufficient quantity to prevent the leaves flagging, or liquid manure may be given to help them to plump the buds. The foliage cannot have too much light. Keep laterals well in check, leaving no more than are absolutely necessary to appropriate any sap that may be in excess of the leaf requirements, and so prevent the principal buds starting. When sufficiently ripened, as they are when the wood is brown and hard and the buds are prominent, they should be removed to a position outdoors in the full sun, standing on slates or boards in front of a south wall or fence, securing the canes to the face of the wall, only giving water to prevent the foliage falling prematurely, and having some waterproof material to throw the water from the pots. In this position they will rest even if the leaves are not shed. When the leaves turn yellow—give indications of falling—commence reducing the laterals; and when the leaves are all off prune, cut the laterals, cut in closely, and cut back the canes to the length required, placing them in an airy shed or cool dry place until required for forcing. Keep the soil dry at their roots, and yet it must not be allowed become dust dry, placing some dry protective material about the pots.

Earliest Forced House.—A dry atmosphere will now be required to thoroughly ripen the wood, but it will not be necessary to employ artificial heat. All laterals and late growths must be kept stopped and complete rest afforded, having the border cool and moderately dry. The borders inside may require water, but if they have been mulched it may not be necessary, whilst outside borders will need covering with dry straw or bracken in order to throw off heavy rains. This is absolutely necessary to insure the complete rest so essential for success with Vines long subjected to early forcing, a too moist condition of the soil tending to late growth, but there must be sufficient moisture to prevent the foliage ripening prematurely. In most cases it will be sufficient to allow a moderate extension of the laterals; and where the Vines are in an unsatisfactory condition prepare for lifting at an early date, getting fresh loam and clean drainage, so that the work can be done quickly when started. There is no danger of losing a crop. Only operate upon a part of the border at once—say the inside border one year and the outside the following. It is desirable to lift the roots and place them in fresh soil nearer the surface whilst there is foliage upon the Vines; therefore, work of this kind ought not to be delayed in the case of Vines that are to be started early in December, which will need pruning by the middle of September, or a little later in the case of lifted Vines.

Vines not Regularly Subjected to Early Forcing.—Vines that have not hitherto been started early will need, as soon as the crop is off, to be thoroughly cleansed by syringing or by the application of an insecticide; and if there is any doubt about ripening the wood or plumping the buds

it will be necessary to keep the house rather close by day, but with sufficient ventilation to cause evaporation and allow the moisture to escape. Give no more water to the border than will prevent the foliage becoming limp. If the weather prove moist employ fire heat in the daytime to maintain a temperature of 70° to 75°, with moderate ventilation, and turn the heat off at night to allow the pipes to cool, increasing the ventilation so as to cause a thorough draught; and this will soon cause the wood to harden and the buds to plump, inducing rest, which for Vines that are to be started in December should be complete from the middle to the end of September. When the Vines have the wood ripe ventilate fully day and night.

Vines Cleared of their Crops.—Second early-forced Vines have the crops cleared; and they should have the foliage cleansed by means of the syringe or engine, and, if needful, by applying an insecticide. If there be any mealy bug or scale promptly use petroleum, a wineglassful to four gallons of water, in which 6 ozs. of softsoap and 1 oz. of soda has been dissolved, keeping the mixture thoroughly agitated whilst it is being applied to the Vines, which must be done thoroughly, wetting every part. It is best done on a calm evening, and should be repeated two or three times at intervals of a few days, and is best used at a temperature of 90° to 100°. If there are any plants they must be removed, and if the roots of the Vines are near the surface, cover the border with dry short litter to absorb the waste.

Keep the laterals fairly in check, but not closely pinched unless the Vines are very vigorous and are not ripening the wood freely, then keeping the house rather dry at night with all the air possible, and somewhat close and warm by day, will tend to promote the maturity of the wood and buds. In stopping vigorous Vines regard must be had to the principal buds, not stopping so close as to cause them to start into growth. Such Vines should be kept without water until the leaves are a little limp. Vines that, on the other hand, are not strong, having been enfeebled by continuous cropping, or other cause, should be encouraged to make growth by applying liquid manure to the border; but whatever extraneous foliage is made must not be allowed to interfere with the free access of light and air to the principal leaves, which must be kept healthy, so that they may appropriate some of the extra food, and store it in the buds and adjacent wood. Ventilate freely day and night.

Grapes Ripening.—Admit air constantly, enough with a gentle warmth in the pipes to insure a circulation. In ripening most Grapes swell considerably, therefore a moderate amount of air moisture is necessary, and there must not be any deficiency of water at the roots. Give the border, if necessary, a good supply, and in the early part of the day, so that superfluous water may be dissipated before night. If the Vines are heavily cropped afford liquid manure, but not strong, and allow them plenty of time, otherwise if there be any hastening of the ripening and a deficiency of moisture or nutriment, it is likely the fruit will be defective in colour. A good rest at night in a temperature of 60° to 65° with air is a great help to Vines taxed to the utmost by weight of Grapes. A moderate air moisture will be secured by damping available surfaces occasionally, and if possible allow the laterals to extend, but overtaxed Vines rarely can cater for more than the principal leaves and Grapes.

CUCUMBERS.—Let the growths be thinned at least twice a week, removing exhausted growths to make room for young bearing shoots. Keep the shoots well stopped to one joint beyond the fruit, or at the fruit if the plants are vigorous and showing no signs of exhaustion. Always allow weakly plants more extension, and crop them lightly. Maintain a steady root action by necessary bottom heat and due attention to watering two or three times a week. The bottom heat should be 80° to 85°, top heat 70° at night, 75° by day, 80° to 85° with sun, closing early to increase to 90° or 95°. Syringe in the afternoon of hot days, but avoid late syringing, for the foliage should be dry by sunset, and commence ventilating early, it being important that the foliage be dry before the sun acts powerfully upon it. The autumn fruiters should now or soon be planted on hillocks or ridges moderately firm, maintaining a moist and genial atmosphere, and they will soon show fruit in plenty.

PLANT HOUSES.

Calecolarias.—Prick off seedlings into pans 1½ or 2 inches apart, so that when they fill this space they will be ready for placing into 3-inch pots. Several successional batches may be obtained from one sowing. Seed may still be sown where the supply of plants from the first sowing are not sufficient. Grow these plants in a cold frame with a northern aspect, at any rate where they can be shaded from the sun.

Cinerarias.—The earliest plants should be transferred into 5-inch pots, others into 3-inch that display signs of crowding in pans. Those still in the seed pans may be pricked off into other pans or boxes 2 inches apart. A little more seed may be sown to supply plants for flowering in small pots late in the season. Give abundance of air to these plants to induce a dwarf compact growth. Be careful not to crowd them, shade from bright sunshine, but carefully avoid over-shading them.

Solanums.—Where these are under glass give them abundance of air. The weather of late has been unfavourable for turning them out, but should it change they are better outside. Keep the plants growing by giving them stimulants occasionally. Seedlings that were placed into 5-inch pots some time ago and encouraged to grow should have commenced to flower freely, although they have been grown closer than cut-back plants or those raised early from cuttings. They should be carefully hardened and subjected to the same treatment as old plants.

Salvias.—These plants should be growing rapidly; pinch the points out of them to induce them to branch. If the stock is deficient cuttings may still be rooted of late flowering kinds, which will make useful plants by autumn. Plants in 5 and 6-inch pots for furnishing purposes are often more useful than those of a larger size. Where tall large plants can be accommodated allow them to extend and branch naturally. There is no difficulty in producing plants 5 or 6 feet high in a season provided the leader is not too closely pinched.

Bourvardias.—Discontinue pinching the early plants and allow them to grow naturally from the present time—that is, if large fine trusses of bloom are needed. If the plants are needed for decoration only any strong shoots that start from the base may be pinched. Our plants have still the protection of frames, but with a change of weather they may be turned out for a time to make room for those in a less forward condition. Some of the latest plants are only just being placed in their flowering pots. These should be kept under glass, and when they have taken fairly to the new soil they will be pinched for the last time. The early batches, whether kept under glass or turned out, may be given weak stimulants occasionally or artificial manure to the surface of the soil.

Primulas.—The earliest plants should be placed in their flowering pots. Pot them moderately deep, so that they will not shake about when in flower. Where practicable plunge the pots amongst leaves or ashes, and when they have taken to the soil raise the frames slightly so that a good circulation of air can play amongst them. This is important if sturdy plants that will flower well are required. Those for succession must be potted as they require more root room; it is a mistake to allow them to become root-bound before they are placed into larger pots. This induces the young plants to flower, which indicates that they have been seriously checked. Double varieties should be placed in 5 and 6-inch pots. Those that flowered late may be divided and potted in 3-inch pots. Each portion should now be well rooted. They will strike from cuttings, but the safest plan is to earth them up until they emit roots from the stem.

Mignonette.—Standards and pyramids should be extending rapidly over their trellises. All the attention needed is to remove the flowers as they appear, and regulate their shoots from time to time. Give the plants abundance of air; during the day the lights may be removed altogether. To do well they should stand on a moisture-holding base, and be carefully watered and syringed twice daily. Later plants for spring flowering should have their trellises placed to them. Seed sown in 6-inch pots should be thinned out. The plants should be 1½ inch apart. Sow a good batch of pots, and place in a cold frame until the seed germinates; the frame should be shaded with mats. To the earliest plants clear soot water may be given, but avoid strong stimulants, they do more harm than good. A little artificial manure applied to the surface is preferable.

Heliotropes.—Plants intended for autumn flowering—White Lady is unquestionably the best—should be placed in 6-inch pots, and stood outside on a bed of ashes in a sunny position. Standards and pyramids should have the flower trusses removed as they appear. Pinch any shoots that are taking the lead, so that the trellis is evenly covered. These plants are better outside than in.

Stocks.—For spring flowering in pots seed should be sown in boxes without delay. Place the boxes in frames until the seed germinates, then grow them perfectly cool, and when large enough pot them singly. The varieties of East Lothian and Intermediate are useful for this purpose. Princess Alice is a very useful Stock, and well worth sowing now for growing in pots.

Campanula pyramidalis.—Sow seed now in a box or pan to maintain a succession of these plants. Those sown last year at this time, and now in 6-inch pots, should be placed in 9-inch; they do well in loam, sand, and one-seventh of manure. They should stand outside. The only protection they need is a cool Peach house during the winter. The seedlings should be raised in a frame, and when large enough potted singly and watered in a cold frame.

Celosias.—Pot those plants that need more root room, 5 and 6-inch pots are suitable. Grow them in cold frames fully exposed to the sun, and give liberal ventilation. Nothing is gained by trying to hurry those raised from seed early in May. Plants raised later, and are only ready for breaking off or placing into pots, will require to be grown in an intermediate temperature. The faster they can be pushed on the better consistent with maintaining sturdy growth.



APIARIAN NOTES.

THE WEATHER.

ANOTHER boisterous week of unseasonable weather has passed, gloomy and stormy in the extreme, with a mean temperature of 52° Fahrenheit. The 21st was an exception, the morning's reading of the thermometer being 54° and the day temperature 70°, the most genial day of the season, and the bees worked tolerably

well for a few hours. The pure Carniolians, as well as their crosses, increased 2 lbs., while the Punic bees increased 3 lbs. in weight.

From all quarters the reports are discouraging. From one quarter a third of the colonies are dead, from another they have to feed to keep bees alive, and from a third prime swarms are casting virgin swarms, and young queens are not laying. These reports cover a very wide field. This sad state of matters is just what I predicted would take place with queens, and unless bee-keepers strain every nerve to secure young fertile queens there will be much disappointment to encounter in 1891. One sunny day would put many queens all right. It is an absurdity to say three weeks' retardation of fertilisation renders the queen sterile, that queens do not come into high laying powers for weeks after fertilisation, and that queens continue as prolific at two or three years as year-old ones.

The foregoing, combined with the experience of a very untoward season for bees, but not more so than many that I have experienced, will, it is to be hoped, instruct bee-keepers on some important points, such as to know beforehand what bees under certain circumstances will do. We have sufficient proof that where young queens have been kept there are few swarms, while in the same districts where queens were older not only have they swarmed, but have thrown virgin swarms long before they were crowded. Upon the age and fertility of the queens depends the success or non-success of the bee-keeper and his colonies.

PREPARING FOR THE HEATHER.

I am awaiting a reply by post as to the state of the Heather. On that reply and the weather in the next few days will I decide whether the bees go or remain at home. If the former the swarms that have young queens, and which were fertilised early, will go; all the others must remain at home. The unswarmed old stocks are in prime order, and will admit of no manipulation further than supering. Had any been weak I would have broken them up and divided their brood combs amongst the late fertilised queens, so as to gain the greatest strength and vigour with the least inclination to swarm. Unswarmed old stocks with ten days or so of fine weather, with a likelihood of a continuation, are sure to swarm, although we super beyond their wants, and will require watching; and if 1890 has not been a profitable one for bee-keepers it is to be hoped they will profit by what it has taught. I am writing this on July 25th. The same day of the month we set our bees down at the Heather last year. It did not turn out a good Heather honey year, although the bloom on the Heather never was finer. It will be remembered that the weather broke on the 7th of July, and there was not a day without rain till the first day of September, and it appears to have been but the commencement of the wet season, which we fervently hope is ended. A decided improvement has taken place; the barometer is rising slowly, and although the day is dull the thermometer is standing steady at 65°, being between 5° and 10° higher than it has been for long under similar conditions.

Before honey becomes plentiful there must be a few days of warmth and sunshine. After the honey is in the flowers there is less need of sunshine if the air be warm, and often the largest gatherings take place under a cloudy sky, but wind is unfavourable to the secretion of honey and to the flight of bees.

FIXED DISTANCES OF FRAMES.

Amongst the many devices of bee-keepers to alter the nature and plans of the bees that of altering the width between the frames during the season, and at all times to a little less than the bees do naturally, is one that has caused considerable discussion, which might have been avoided, because not the slightest advantage is gained by it, but the reverse. For more than a quarter of a century I have used brass nails or shoemakers' tacks as distancers in making of cheap hives, tacks being cheaper than brass nails

used for furniture. The Americans are now adopting this method, and the 1st of July "Gleanings" has an article with a drawing showing exactly what I have been doing so long, and what I have described under the heading "How to Make Cheap Hives."

Those who propose making hives for their own use should not deviate a hair's breadth from spacing their frames at 1½ inch from centre to centre, and when having them made should insist upon that distance being maintained, together with stouter top bars than are generally sent out. I may enlarge upon this question again, and as I mean to go to the moors with my bees, will watch their movements and report. I am only sorry that the weather has precluded the possibilities of a fair trial with the different races of bees in my apiary, but as the Punic gathered 1 lb. more than my best Carniolian stock on so small a gathering, augurs well that they will prove themselves the superior bee.

FIXING SECTIONS TO TOP BARS.

"Perhaps 'Lanarkshire Bee-keeper' will kindly inform me, at his earliest convenience, what size sections to use in the Lanarkshire hive, and where they are to be procured, one width throughout, except bottom rail? How many nails do sections require to fasten them to top bar?—J. D. L., *Northumberland*."

Sections are fastened to top bars by driving a three-eighth or half-inch fine wire nail at each end and opposite corners, or by staples, either to catch the bar and section, or they may be driven into the centre of the bar. Many people prefer the former, while others prefer the angled tins as described several years ago. There is no maker of these in this country. Numbers of people have ordered them from America. Those who have not procured them cut down common sections to the necessary requirements. I use three sizes, 2 lbs., 1½ lb., and 1 lb., 5¼ high by 6¾, 4½ and 3¾ long respectively. As our climate is so fickle, it will be obvious to all the necessity of putting no obstacle in the way of bees, the removal of the broad bottom rail is the removal of a great obstacle to bees entering supers.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

Henry Norton, Louth, Lincolnshire.—*Descriptive Catalogue of Dwarf Roses.*

Armitage Brothers, High Street, Nottingham.—*Catalogue of Dutch Bulbs.*

J. E. Barnes, 9, Exchange Street, Norwich.—*Catalogue of Seeds for Autumn.*



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Figs not Swelling (*Inquirer*).—In consequence of a peculiar confusion of addresses it is impossible for us to determine whether an answer to a letter which we have received on the above subject is required through the *Journal of Horticulture* or another medium; if through this *Journal* the Editor will be obliged by the name and address of the writer of the letter.

Aspect for Greenhouse (C. T. H.).—We cannot imagine an unheated greenhouse giving satisfaction, except it is intended for wintering half-hardy plants, with either a south-east or south-west aspect. The morning sun is conducive to the health of plants, and we should choose the former aspect for the house, and provide means of excluding frost from and maintaining the requisite temperature in the house, if the object in view is to grow various kinds of greenhouse plants.

Hollyhock Leaves Diseased (G. S.).—The leaf is badly attacked by the Hollyhock fungus (*Puccinia malvacearum*). The best means of treatment is to destroy all leaves as soon as they are attacked. It spreads rapidly, as the spores germinate almost as soon as mature. Look for it on other plants, as it infests other species of the order Malvaceae, and destroy all infected parts.

Grapes Scalded (J. W. M.).—We have frequently stated that a low night temperature is the precursor of what is known as scalding, and if you had employed more fire heat, also pursued the treatment described by Mr. A. Young on page 52 a fortnight ago, you would in all probability have prevented the loss of many berries. Read also what is said in "Work for the Week" in our issue of the 3rd inst.

Brown Patches in Lawn (A. S.).—The dark patches to which you allude, and which you say are spreading, are probably caused by a fungus, and not by small worms. Try the effect of a copious application of clear fresh lime water, giving sufficient to pass down to the subsoil, then follow with a sprinkling of nitrate of soda at the rate of an ounce to the square yard, not more, on a rainy day.

Vegetable Marrows Failing (W. J.).—Your plants, of which you send samples, are attacked by a disease to which they are liable. It is of a fungoid nature, and most prevalent during wet cold seasons. The water you have given, and especially the liquid manure, would aggravate the evil. It is doubtful if the plants will recover; though if you remove all affected fruit and bad leaves, there is the possibility of improved growth succeeding under favourable weather.

Trentham Black Grape (L. J. A.).—It is an excellent Grape, requiring the same treatment as and ripening with Black Hamburgh. It forces as well as that variety, but is particularly desirable for cool house treatment. It is not generally a shy fruiter, but usually very free. It is valuable for houses where only a little heat or none is given, keeping longer after being ripe than Black Hamburgh. Under whatever conditions Black Hamburgh succeeds this will also do well. It is not grown so much as its merits deserve.

Canterbury Bells for Forcing (T. N.).—From a sowing made now you will not obtain plants sufficiently strong for forcing next spring. For this purpose they require to be sown early, so as to secure strong plants and have them well established in pots before autumn. A sowing made in April or early May outdoors, and the plants pricked out 6 inches apart when large enough, and potted in September, using 8 or 9-inch pots, will give handsome specimens for spring flowering. They should be kept in a cold frame during the winter and be brought into flower gently, a greenhouse temperature being quite warm enough, assigning them a light and airy situation.

Cucumber Leaves Spotted (A. D. C.).—The large but not stout-textured leaf sent, and its very long, thick, succulent stalk, suggests that the plants have been too generously treated—or in other words, have not been able to elaborate the crude sap, but have made an endeavour to do so by a great expanse of foliage surface. In a bright summer there might not have been any such breakdown that appears to have occurred. When the sap is impure it simply invites fungoid and other diseases in plants. You say the fruit is also spotted. This may arise from the same cause, or may be the result of vibrios, or microscopical worms, which are present in fruits from which gummy matter exudes. If the leaf sent is a fair sample we have no doubt an excess of sap during the prevailing dull weather is the chief cause of the unsatisfactory condition of the plants.

Variegated Cabbage—Pea (R. M.).—The Cabbage is distinctly attractive, every leaf being broadly margined with white. We have seen many sports of the same nature, but only one equal to yours, and the plant was destroyed by the severity of the winter. You will probably take better care of yours, as it is as beautiful in its way as good examples of variegated Kale. We have known the name of Goldfinder applied to the Ne Plus Ultra Pea, and the pods you send, also the peas in them, resemble this valuable old variety, though we are not prepared to pledge ourselves to the identity. Procure seed of the true Ne Plus Ultra, and grow a row side by side with Goldfinder next year, and you will be able to note the difference between them, if any.

Carbonate of Soda as a Liquid Manure for Strawberries (H. P.).—1, It is the ordinary carbonate of soda of the chemists. Soda ash contains other salts besides soda, but the principal are carbonate of soda, common salt, and sulphate of soda. It is useful as manure, but the carbonate is the correct substance to use as a liquid, but not too much, as it encourages leaf growth. 2, Nitrate of soda is not used for Heaths and Epacris where the water is hard, but a little would answer the twofold object of softening the water and invigorating the plants. It must, however, be used carefully. Ordinary or washing soda is the kind used for softening purposes. 3, Sulphate of iron has been used agriculturally at the rate of 1 to 1½ cwt. per acre, but it has not been

much used in gardens. It might be tried in weak solution, commencing with a quarter of an ounce to a gallon of water. We shall be pleased to have experimental results.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (A. B. D.).—In the absence of any description of the plant we can only suggest that the withered flower is an early Gladiolus, possibly *G. Colvillei* albus. (W. M. B.).—The white flower is *Francoa ramosa*, fancifully called the Bridal Wreath. The Clematis is not *C. Jackmanni*, but many persons would consider it superior. We cannot positively name it from the solitary flower, but it is possibly *C. rubella*. We have pleasure in attending to your letter, and trust you will not long remain an invalid. (L. G. P.).—*Spiraea Lindleyana*. (W.).—1, *Monarda didyma*. 2, *Scabiosa atropurpurea*. 3, *Scabiosa caucasica*. 4, *Viburnum Lantana*. (*Adolescens*).—The specimens seem to be rightly named with the exception of 5, which is *Monarda purpurea*. 1 is perhaps *Veronica spicata*. 2, *Aconitum Lycocotum*.

COVENT GARDEN MARKET.—JULY 30TH.

Business brisk with heavy supplies, prices being somewhat lower.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, $\frac{1}{2}$ sieve	0	0	to	0	0	Grapes, per lb.	1	3	to 3 0
„ Nova Scotia and						Lemons, case	10	0	15 0
„ Canada, per barrel	0	0	0	0		Melons, each	1	0	2 0
„ Tasmanian, p. case	0	0	0	0		Oranges, per 100	4	0	9 0
Cherries, per $\frac{1}{2}$ sieve ..	3	6	10	0		Peaches, dozen	1	0	12 0
Currants, Black $\frac{1}{2}$ sieve	4	6	5	0		St. Michael Pines, each..	2	0	6 0
„ Red, $\frac{1}{2}$ sieve ..	3	0	4	0		Strawberries, per lb. ..	0	2	0 6

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes, dozen	0	0	to	0	Mushrooms, punnet ..	1	6	to	2
Asparagus, bundle ..	0	0	0	0	Mustard & Cress, punnet	0	2	0	0
Beans, Kidney, per lb. ..	0	9	1	0	Onions, bushel. . . .	3	0	4	0
Beet, Red, dozen	1	0	0	0	Parsley, dozen bunches	2	0	3	0
Brussels Sprouts, $\frac{1}{2}$ sieve	0	0	0	0	Parsnips, dozen	1	0	0	0
Cabbage, dozen	1	6	0	0	Potatoes, per cwt. ..	3	0	4	0
Carrots, bunch	0	4	0	0	„ New, per lb.	0	2	0	0
Cauliflowers, dozen.. ..	2	0	4	0	Rhubarb, bundle	0	2	0	0
Celery, bundle	1	0	1	3	Salsafy, bundle	1	0	1	6
Coleworts, doz. bunches	2	0	4	0	Scorzonera, bundle ..	1	6	0	0
Cucumbers, doz.	2	0	3	6	Seakale, per bkt.	0	0	0	0
Endive, dozen	1	0	0	0	Shallots, per lb.	0	3	0	0
Herbs, bunch	0	2	0	0	Spinach, bushel	1	0	2	0
Leeks, bunch	0	2	0	0	Tomatoes, per lb.	0	3	0	5
Lettuce, dozen	0	9	1	3	Turnips, bunch	0	4	0	0

CUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.		
Arum Lilies, 12 blooms ..	2	0	to	4	0	Mignonette, 12 bunches..	2	0	to	4	0
Asters, per bunch, French	1	6		2	0	„ Fr., large bnch	0	0		0	0
Bouvardias, bunch ..	0	6		1	0	Narcissus, 12 bunches ..	0	0		0	0
Carnations, 12 bunches ..	4	0		6	0	Pæony, dozen bunches ..	0	0		0	0
„ 12 blooms ..	1	0		2	0	Pansies, dozen bunches ..	1	0		2	0
Calceolaria, doz. bunches	4	0		6	0	Pelargoniums, 12 trusses	0	9		1	0
Cornflower, doz. bunches	1	6		3	0	„ scarlet, 12 bnchs	3	0		6	0
Eschscholtzia, 12 bunches	2	0		4	0	Pinks (various), doz. bchs.	3	0		6	0
Eucharis, dozen	4	0		6	0	Primula (double) 12 sprays	0	6		1	0
Forget-me-not, doz. bnch.	1	6		4	0	Ranunculus, doz. bunches	0	0		0	0
Gardenias, 12 blooms ..	2	0		4	0	Roses (indoor), dozen ..	0	6		1	6
Iris, various, dozen bnchs.	6	0		18	0	„ Moss (Eng.), 12 bch.	6	0		12	0
Lapageria, 12 blooms ..	2	0		4	0	„ Red (Eng.), 12 bch.	2	0		6	0
Gladiolus, 12 bunches ..	4	0		9	0	„ Red, 12 blooms ..	1	0		2	0
Gypsophila, per bunch, Fr.	1	6		2	0	„ Tea, white, dozen ..	1	0		3	0
Lilium, various, 12 blms.	0	6		1	0	„ Yellow	2	0		4	0
„ longiflorum, 12 blms.	2	0		4	0	Spiræa, dozen bunches ..	6	0		9	0
Marguerites, 12 bunches	2	0		6	0	Tuberose, 12 blooms ..	0	6		1	0
Maidenhair Fern, dozen						Wallflowers, doz.	0	0		0	0
bunches	4	0		9	0						

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.		
Aralia Sieboldi, dozen ..	6	0	to	12	0	Geraniums Scarlet, p. doz.	3	0	to	6	0
Arum Lilies, per dozen ..	8	0		12	0	Heliotrope, per doz. ..	5	0		8	0
Arbor Vitæ (golden) doz.	6	0		8	0	Hydrangea, doz. pots ..	9	0		18	0
Azalea, various, per dozen	0	0		0	0	Lily of the Valley, 12 pots	0	0		0	0
Calceolaria, per doz. ..	6	0		9	0	Lobelia, per doz.	3	0		4	0
Climbing Plants, various,						Marguerite Daisy, dozen	6	0		12	0
dozen pots	4	0		9	0	Mignonette, per dozen ..	4	0		6	0
Cyclamen, per dozen ..	0	0		0	0	Musk, per dozen	2	0		4	0
Deutzia, 12 pots	0	0		0	0	Myrtles, dozen	6	0		12	0
Dracæna terminalis, doz.	24	0		42	0	Nasturtiums, dozen pots	3	0		4	0
„ viridis, dozen	12	0		24	0	Palms, in var., each ..	2	6		21	0
Epiphyllum, per dozen ..	0	0		0	0	Pelargoniums, per doz. ..	6	0		12	0
Erica, Cavendishi, per pt.	0	0		0	0	Rhodanthus, per dozen ..	4	0		8	0
„ various, dozen	12	0		18	0	Roses (Fairy), per dozen	8	0		10	0
Euonymus, var., dozen ..	6	0		18	0	„ 12 pots	0	0		0	0
Evergreens, in var., dozen	6	0		24	0	Saxifraga pyramidalis,					
Ferns, in variety, dozen..	4	0		18	0	per dozen	18	0		24	0
Ficus elastica, each ..	1	6		7	0	Spiræa, 12 pots	6	0		9	0
Foliage plants, var., each	2	0		10	0	Stocks, per doz.	4	0		6	0
Fuchsia, per doz.	4	0		9	0	Tropeolums, various, per					
Geraniums, Ivy, per doz.	3	0		6	0	dozen	3	0		6	0

Bedding Plants in variety, in boxes and pots.



THE FARMER'S COW.

SPECIAL utility and general utility are the two points of moment which claim particular attention in making a selection of cows for stocking a farm, and local circumstances should determine if greater weight is given to one point or another, or if an equal balance is maintained between both. With a steadily downward tendency in the value of corn live stock has naturally been looked to more closely as a means of relief, and in many an instance it has failed to help the farmer in his need, more because of mismanagement than anything else. To purchase cattle at prices which preclude any possibility of profit simply because they "must" be had is ridiculous; equally ridiculous is it to breed inferior stock.

Faulty practice in this important branch of farming is doubtless owing to the fact of corn having been so profitable at one time that wherever it could be grown it has preference over everything else. Dairy farming and cattle rearing had comparatively little notice, superior practice in either being quite exceptional. Meanwhile the population went on steadily increasing, prosperity combined with the spread of information about wholesome nutritious additions to and changes of the people's dietary caused a growing demand for dairy produce, which we failed to supply. The importer saw his opportunity and seized it. Foreign produce rules the market, for farmers over the seas have made that produce so superior that it is only by bringing home produce up to a high and uniform standard of excellence that we can enter upon a competition with them with even reasonable hopes of success.

Of equal importance is the general improvement of our cattle. The exportation of select pedigree stock from this country goes steadily on, and it points in no uncertain manner to a reflux of both store and fat cattle of superior quality and in large quantities within a measurable period of time. Well will it be if we can meet it by such a general improvement in cattle, in feeding, and in the provision of food, as shall virtually give us the control of our own markets. This is no mere fanciful project; general improvement is unquestionably very possible. We ought to and could keep twice or three times the number of cattle per acre than we now do. The man who has hitherto been satisfied with £7 or £8 per acre for a crop of green fodder, ought to aspire to a return of twice that amount, simply because it is possible, and is realised under certain conditions. No longer ought we to waste our time and money upon grazing under-bred cattle, but rather turn to choice home-bred stock capable of being finished for the butcher well within the second year. Early maturity with quick and profitable returns is what we require and can have, nor ought we to rest satisfied with inferior cows. A cow giving only 10 or 12 quarts of milk daily is not worth keeping.

No doubt the model farmer's cow is an animal answering to the requirements of the Royal Agricultural Society in their class for dairy cattle of any breed. Preference is given to animals combining excellence for dairy, grazing, and stall-feeding purposes. Take for example the first-prize cow at the Preston meeting in 1885. This was "Red Cherry," a Lincolnshire shorthorn, with a very large well-shaped udder, milk veins highly developed, and capable of making a very considerable return as beef when her powers as a deep milker began to fail. The Judges said, "This is just the stamp of cow that dairymen ought to look for, combining as she does a well-developed frame, with faultless udder, and all other milking qualities. Her yield of milk, as tested in the Show

yard was 27 quarts per diem, while the quality, according to analysis by Dr. Voelcker, was a fraction over the required standard." The conditions of the competition were that cows entered should give not less than 18 quarts of milk per day, containing not less than 12 per cent. of solids (including butter fat).

Plenty of farmers require cattle solely for grazing and stall-feeding, and to them the work of selection is much easier, their choice ranging according to locality through Shorthorns, Herefords, Devons, Sussex, Galloway, Polled Angus, Red Polls, Welsh Runts, and cross breeds. More, very many more, of the latter do we wish to see, and again we say to every farmer, Breed your own cattle, and don't waste your means upon those sharp, clever middlemen who attend and virtually control every market, while you are mere puppets in their hands. Make your farms self-contained and self-supporting, and keep yourselves as free as possible from exterior influences. But pray don't shut your eyes to them, rather be on the alert for early information of all change, all progress that affects your business in any way.

WORK ON THE HOME FARM.

The farmer's brief time of leisure between haymaking and harvest has come, and he will do well to turn some part of it to account to see something of farming practice elsewhere. Before leaving home it is well to ascertain where some really good practice may be seen, and to those who as yet have not given ensilage its place upon their farm we say, Go and see as much of it as you can elsewhere, and so get the necessary feeling of confidence to adopt a process so conducive to success in stock management. Above all things listen to no method of ensilage where thorough pressure is not enforced. We have no doubt that in those rare instances where difficulty is found in getting animals to consume silage freely the fault lies in the making.

The hay generally made this season will be of inferior quality, and really choice samples will bring high prices later on. Much good hay has been made as the weather cleared after the St. Swithin's storm, but there is a preponderance of over-ripe wiry stalks among it, as it was left so late that all the earlier grasses had ripened seed and stalks. Much of the hay mown on St. Swithin's day was positively afloat after the storm on heavy land pastures, and on some low-lying land every hay cock save one was swept away by the flood waters. Certainly the value of ensilage was never more apparent than it is this season.

We recently saw an Oat field sadly infested by docks, and the short ears and stunted growth of the Oats told a tale of foulness and poverty all too plainly. With soil so saturated by frequent downpours of rain it would be an easy matter to root up the docks. That would be the first step in reclaiming such a field, and our next would be to feed off the Oats with our draft ewes in folds, for such an inferior crop could be turned to no better account, the old sheep would thrive upon it, and the land would be sufficiently enriched for Cabbaze, Rape, Rye Grass, Rye, winter Oats, or Wheat. Hedgerow weeds should be mown before harvest to prevent seeding, and a close search made everywhere upon the farm for docks and thistles. It is only by the timely and regular destruction of all such pests that we can hope to have a really clean farm.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain	
1890. July.		Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature.		
			Dry.	Wet.			Max.	Min.	In sun.		On grass
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.	
Sunday	20	30.259	58.5	51.6	N.W.	58.9	67.7	45.3	118.8	43.3	
Monday	21	30.218	60.7	53.0	N.	59.2	70.0	50.9	119.3	49.3	
Tuesday	22	30.091	65.0	59.7	N.W.	60.4	75.6	59.7	126.9	59.1	
Wednesday ...	23	30.173	62.5	58.1	N.W.	61.9	74.2	53.1	123.0	50.2	
Thursday	24	29.965	65.9	59.8	N.W.	62.2	76.2	67.9	126.1	56.0	
Friday	25	30.096	62.3	54.5	N.W.	62.0	71.9	50.9	127.3	47.4	
Saturday	26	30.053	61.2	64.1	S.	62.4	73.8	56.8	120.2	56.3	
		30.121	62.3	57.1		61.0	73.1	53.5	121.4	51.7	
										0.037	

REMARKS.

20th.—Cloudy early, bright fine day.
21st.—Fine with occasional sunshine.
22nd.—Spots of rain about 9 A.M.; bright warm day.
23rd.—Dull early; bright warm day.
24th.—Fine and bright till 3.45 P.M.; then spots of rain, and a shower for a minute or two at 4.5 P.M. not sufficient to measure, fine night.
25th.—Bright and fresh throughout.
26th.—Misty early, with occasional showers; generally bright after 10 A.M.
A generally fine week of about the average temperature.—G. J. SYMONS.



WHEN fruit trees are barren, or nearly so, as is the case with the majority this year in British gardens and orchards, it is perhaps only natural that the circumstance should be taken advantage of by hypochondriacs for pointing out what they conceive to be the uselessness of planting more trees. It is the way of the world, or at least the habit of several persons in it, never to be satisfied. When trees are bent to the ground with their loads of fruit, as they have been in the past, and will be again, the same objections are heard to the planting of trees, but on the ground then that there is more fruit than can be profitably sold or eaten. If persons who, we will not say thus reason, but assert themselves, were to be accepted as guides, the planting of fruit trees would cease. We are counselled not to plant on the one hand through the fear of providing too much fruit, and on the other because the trees do not bear half enough. Since such peculiar conclusions are arrived at and expressed, and as a considerable number of persons are influenced by them, it is desirable, and even necessary, to keep the question of the home fruit supply prominently before land-owners and the fruit growing public. This is what the British Fruit Growers' Association is doing, and holding some of its meetings in the provinces is a step in the right direction.

The meeting at Leicester in connection with the Horticultural Show held there this week, while adding a feature of interest to the Exhibition, will probably give an impetus to fruit culture in a great and important district. There is no better soil nor more favourable positions for increasing and improving the home fruit supply than in the midland counties. No finer grain, root, and leguminous fodder crops can be found than in the midlands; and wherever Wheat and Potatoes yield abundantly and ripen early, and where Clover and Turnips grow luxuriantly, there the finest of fruit is capable of being produced. But varieties and sites must be judiciously chosen, and cultural attention afforded to the trees for the attainment of the object. This is necessary for the production of the most familiar farm and garden crops. To these much thought is directed and labour applied, otherwise they would be complete failures. But it has not to anything approaching the same extent become the custom to cultivate fruit trees with equal care. On the contrary, the practice of planting trees and leaving them to take care of themselves has too long prevailed, and the necessity for establishing young trees long before the old have become unprofitable has not yet become recognised. But the system will have to be adopted before the British fruit supply can be regarded as satisfactory. Farmers might with as much reason rely on rickety worn-out horses for doing their work, and toothless sheep for paying the rent, as on exhausted canker-eaten trees for yielding fruit worthy of the name for home use, and for commanding attention in markets.

The fruit of the future that can alone be profitable to the grower will be the produce of young trees, or trees in the best of health, because of the nourishment they need being afforded by the soil, and with the branches exposed to the full influence of the sun. Such trees yield large, well fed, juicy, glossy, and attractive fruit, and this, moreover, can be abundantly produced in a very few years by planting trees on dwarfing stocks which feed near the surface of the soil where the food is the best, and can be so easily provided. Crowded mop-headed trees, a mere thicket of interlacing branches

and stunted growths, are essentially incapable of providing what is needed, and the crops from thousands of such trees can only be regarded as waste.

Relative to the failing fruit crops of any particular year checking the planting of trees, Mr. A. H. Pearson, in his practical essay read at the Leicester Conference, pertinently observes that Irish Potato growers have not been frightened by the disease from cultivating the crops, nor, he goes on to say, "are we going to turn our backs on fruit culture because of a few difficulties." That is fairly representative of the British characteristic of combating obstacles till they are surmounted, and it is so doing and not "turning our backs" on them that has made the nation rich and great. If the failure of a crop occasionally was to have a deterring influence, not a few persons would cease growing even grass for hay because they practically lost their crop this year through continuous wet weather. Through the same cause—violent storms—grain crops have been ruined over and over again, yet the work of sowing and reaping has continued, and will continue, in spite of occasional impediments, though the culture cannot compare with fruit growing for yielding profit over an average number of years when this is well conducted. It is not for the sale of fruit alone, however, that trees should be planted, but for affording fruit of superior quality for home use. The character of the supply for that purpose is, generally speaking, quite unsatisfactory. It is true that some of the outdoor crops must fail occasionally, as other garden and farm crops fail, but where fruit of all the useful kinds are intelligently cultivated under ordinary favourable conditions, a total failure of the whole may be said never to occur, and a thoroughly useful supply of some can be relied on, as well as can a supply of vegetables. With extra, and the reverse of extravagant, provision in the form of cheap glass structures, which so many have ample means for erecting, coupled with good management, fruit of the highest possible quality of any desired kind can be had with almost absolute certainty. Mr. Rivers refers to this in his excellent paper on stone fruits, but he does not tell half of what he has accomplished this year at Sawbridgeworth; in fact, he gives no adequate indication of either the quantity, quality, or value of the fruit that we have this year seen in his unpretending structures, and on trees in pots removed from them after the crops were safe, and plunged in the open air.

Apart, however, from this system, fruit culture ought, and no doubt will, be greatly extended; it is rare that even all varieties of Apples fail. Mr. Pearson very pointedly recommends a free and one of the most certain bearing of Apples, Duchess of Oldenburg, and thinks it will surprise his friends in the south that he should give it the post of honour in his short but useful list. We suspect those southerners who have been close observers of Apples during recent years are fully alive to the value of this Russian variety. One cultivator of great experience who has been planting trees for profit has excluded all others and is growing this alone. Mr. Rivers could give testimony of its usefulness, for he commenced sending fruit of it to market in August, and we may almost venture to state that there is not one other variety in his great collection that will be of equal value to him this year; and in a note on another page Mr. Bunyard quotes the market price of this distinct and good early Apple; and though this is 2s. a bushel less than for Irish Peach, the former is the greater bearer.

Mr. Bunyard also communicates interesting information on the influence of stocks as affecting the crop of fruit. Trees on the Crab and Paradise stocks produced ample blossom, but the difference in the crops of fruit following is remarkable and significant. He can scarcely account for this. The colder and slower moving sap of the deeper rooting stock at a critical time was possibly prejudicial. Be this as it may, the roots of the Paradise stock would be in a warmer medium during the blossoming period, and it may be expected that the supply of sap for sustaining the embryo fruit

would be more free and uniform in consequence. We have seen numbers of young dwarf trees of different kinds of fruit bearing well, while old trees surrounding them are barren.

It is only natural that a scant crop of fruit and barren trees should be disappointing to the owners of them, but trees cannot bear heavy crops always. One great grower was heard to say the rest would do his Apple trees good, and he hoped would have another and important result—namely, of starving out the codlin moth, which was becoming seriously destructive, and he thinks the pest cannot exist for a whole year without anything to eat. He intends planting more trees, especially of Duchess of Oldenburg.

FRUIT CONFERENCE PAPERS.

THE following are two of the papers referred to above as having been read at Leicester on Tuesday last by Mr. T. Francis Rivers and Mr. A. J. Pearson. Others will appear in a future issue.

CHERRIES AND PLUMS FOR PROFIT.

BY MR. T. FRANCIS RIVERS.

THE Cherry is, and has been always, one of our most important industrial fruits, coming into use almost as soon as the Strawberry, and remaining for some weeks after. A May Duke Cherry tree loaded with its crimson fruit is a sight beloved of boys and birds. The Norman orchardists declare that the orioles who arrive first pass the word to their followers that the Cherries are reddening in Normandy, and when the signal is given they descend in shoals on the trees. It is certain also that in many parts of England it is almost hopeless to keep a crop of fruit from these busy thieves. I know from my own experience that it is quite hopeless, and I am compelled to grow all my fruit under glass.

The tree is hardy, and will bear abundant crops of fruit very far north. In St. John's "Wild Sports of the Highlands" he speaks of the wood pigeons feeding on his plentiful crops of Cherries in Morayshire, near the Bay of Findhorn. It flourishes and fruits freely in all dry sandy soils, but does not thrive in deep rich alluvial districts. On the high and dry Epping plain, where I believe water has been sought for and not found at a depth of 800 feet, the Bigarreau and Heart Cherries thrive exceedingly; and I have also seen abundant crops of May Duke Cherries in the dry and sandy soils of Woburn Sands near Bedford. When establishing a Cherry orchard this condition of the tree should be always considered, and the knowledge will be of considerable use in winning a profit from a soil which the farmer or grazier would pass by as unsuitable for his purpose.

For practical purposes the Cherry may be divided into four classes—the Guignes or Heart Cherries, the Bigarreau, the May Duke, and the Morello. The Guignes or Heart Cherries are the earliest to ripen. The earliest large Cherry of this class is the Guigne d'Annonay, which is large, sweet, and very good, purplish black in colour, ripening in an unheated orchard house about the first week in June, and in a warm hot season the last week in May. The next in order, and in my opinion the finest of the class, is the Early Rivers. This was raised some years since from the Early Purple Guigne, a very delicious and fine Cherry, but rather too tender for out-of-doors culture in this country. Under glass the Early Rivers ripens the first week in June, and will hang in good condition until the second week in July. For some time I hesitated to recommend it for cultivation as a standard tree in orchards, but I now find that it is as hardy as the May Duke, and it produces abundant crops of fine large black fruit a fortnight before the May Duke. I can safely recommend it as one of the most profitable Cherries existing. It has lately been planted on a large scale in Kent, with the most successful results, and I am therefore, supported in this opinion by the experience of others. The Belle d'Orleans is a very early Heart Cherry, bright red and white in colour, ripening also in the beginning of June, but flowering too early to escape damage from frost. The Governor Wood is a bright yellow and red Guigne, ripening about the middle of June, very hardy and vigorous, a most abundant bearer, and a profitable market Cherry. It is a popular sort in America, from whence it was introduced in England some years since. The next in order to ripen is the Early Red Guigne, a very dark red Cherry, of large size and delicate flavour, worthy a place in a collection, but not adapted for general cultivation. The Elton, a well-known early sort, ripening before the Bigarreau. The next in order are the well known Turkey Black Heart, the Bedford Prolific, a hardy variety of the Black Tartarian, which is too tender in this country unless grown under glass or on a wall, the fruit of which will hang on the tree under glass until

August, when the Late Purple Guigne, a very fine, large, and rich Cherry, ripens, hanging through August and late into September; the Guigne de Winkler, a bright red, very juicy and sweet sort, ripens in September, and lasts well on the tree until October, closing the series of Guignes, which differ from the Bigarreau in the quality of the flesh, which is very tender, sprightly, and delicious.

The Bigarreau Cherries are perhaps better known than the Guignes, the fruit is more solid in texture, and hence better adapted for carriage. The Bigarreau Jaboulay or Early Lyons is the earliest large fruit of this series. This is a very large and fine Cherry, earlier than the May Duke by some days, requiring a wall or an orchard house. The Bigarreau de Schrecken is an early black sort of recent introduction, very hardy and good. The Early Black Bigarreau, the Early Red Bigarreau, the Bigarreau Noir de Guben, precede the White Bigarreau, and are abundantly fruitful. The White Bigarreau is the Cherry grown for the markets in Kent, the orchards being said to realise fabulous profits. The variations of this sort are the Bigarreau Monstrueuse de Mezel (when well grown the fruit of this sort is enormous), the Bigarreau Napoleon or Late Mottled Bigarreau, with numerous other synonyms, very large and late. The Emperor Francis, a recent introduction, is very late, hanging long into September under glass, this is a very large bright red sort, exceedingly handsome on the tree. The Late Black Bigarreau ripening after their light red and yellow cousins, may be described as very large, firm and rich flesh of a lustrous black. Placed in their order of ripening they consist of the Bohemian Black Bigarreau, the Bigarreau Noir de Schmidt (an enormous fruit), the Large Black Bigarreau, and the Late Black Bigarreau. The Tardive de Lich and the Belle Agathe are late sorts, lasting well into October. I have named many varieties which I do not think are generally known, but I have cultivated them all under glass, and I have thus been able to take special notice of their different habits. Those who cultivate them in an orchard house will, I am sure, find the study of the variations a source of peculiar interest, and also of great benefit to the fruit growing community, as it is only by cultivation under glass that new and possibly valuable sorts can be tested.

The Bigarreau and Guigne Cherries are of the highest value as dessert Cherries, and as the fruit is said to be entirely devoid of acidity they are a very welcome diet to the invalid, to whom the tender and delicate flesh of the Guigne is better suited than the firm and sometimes rather hard Bigarreau. The May Duke Cherry is perhaps the most popular of the tribe; at all events, we are most familiar with it. No boy ever seems to be surfeited, and can consume an indefinite quantity. There are not many varieties, but some are distinct from our old English sort—not in quality, but in the season of ripening. The Empress Eugénie is an early variation, having a maturity of some ten days earlier. The Royal Duke, the Duchesse de Pallau, the Gloire de France, the Archduke, and the Late Duke all follow in succession. If protected by netting from birds these Cherries will hang some weeks on the trees, giving a continual supply of fruit, either for the dessert or the kitchen.

There are some palates which are very well satisfied with the acid Cherries of the fourth class, which comprises the Kentish, the Flemish, and the Morello. Of these I think the Kentish and the Morello are the best. The value of the Morello is well established, as it is the Cherry for preserving either in bottles or spirits. Cherry brandy has long been a popular cordial in England. On a north wall protected with netting it will last very late into the autumn, and when black and thoroughly ripe the fruit is very refreshing and grateful. The cultivation of the Cherry in orchards is not difficult. As I have said before, it is essential to success that a dry calcareous gravel be selected, but instead of planting standard trees at 24 feet apart, of which the prospect of profit to the planter is somewhat remote, I should plant dwarf trees in rows 15 feet apart row from row and 12 feet apart tree from tree for all Guignes and Bigarreaux, and rows 12 feet apart row from row, with 9 feet plant from plant, for the May Duke and Morello. These trees are easier to manage, the fruit can be gathered without ladders, and the space between the rows can be utilised for vegetable crops or for a certain number of years by Strawberries, Gooseberries, or Currants. The trees should be pruned as little as possible, as the Guignes and Bigarreau are very impatient of pruning. My own experience is that this should be done in the autumn, superfluous shoots removed, and the summer growth thinned about the beginning of October. If severely pruned both these classes are inclined to gum, and then comes disease. The May Duke and Morello classes may be pruned in the summer and autumn without detriment, but as they are always inclined to produce fruit in quantity the trees after a certain age will not require much pruning; it will be necessary, however, when the trees are grown in rows to keep the growth as far as possible in the line of the rows.

The Montmorency Cherries are very dwarf growing kinds which merit a place in English fruit gardens; they are dwarf, easily grown, and abundantly fruitful; they are grown in large quantities near Paris, and sold in the markets very early in the summer, being used for the delicious Cherry compôtes so popular in France.

The stocks for grafting Cherries are of two kinds, the Mazzard or wild Cherry—the seedlings from this are necessary for the Bigarreau and Guigne Cherries—and the *Cerasus Mahaleb* or *Cerise de St. Lucie*, which is a good stock for the May Duke and the Morello. The advantage gained from the employment of the Mahaleb stock is that it may be planted on a poor chalk soil. It will grow freely in the most unpromising situation provided that the soil is dry. It is, of course, only an alternative, as the May Duke and Morello grow perfectly well on the wild Cherry stock. With the exception of the Governor Wood and the Early Rivers the Guigne and the Bigarreau will not grow on the Mahaleb stock, and it is useless to try it. I believe that I am right in saying that Cherry culture is not unprofitable in England, and I am certain that many districts may be utilised for the production of this very useful fruit.

Those who wish to grow and taste Cherries in perfection must grow them under glass; the fruit attains very great perfection, and is protected from rain and birds. An unheated span-roof house about 18 feet wide will give a very large supply of fruit, the trees being placed down the centre of the house, so that the sun shines on both sides of the tree. When grown in pots they can be removed at will, a convenience not obtained when the trees are planted in the soil.

About the end of July when Cherries cease to be plentiful in the markets, their place is taken by another fruit of greater economic value, and of which the cultivation in this country will some day be much more extended than it is at present. The Plum, like the Cherry, may be divided into classes, of which the principal divisions are the round fruited and oval fruited, freestone and clingstone. The earliest Plum to arrive in the market in large quantities is the Early Rivers or Early Prolific. This is a well-known and popular Plum, raised about forty years ago. Although I understand that it does not succeed everywhere, I think that in suitable localities it is one of the most profitable Plums in existence. My own orchards, on a calcareous clay, have always given me abundant crops. The Czar, a very hardy and fine Plum, closely follows the Early Rivers. These two Plums are valuable sorts, as they are abundantly fertile, and can be sent to market at a very early date, for although the foreign Plums arrive in England by the end of July, the quality is not to be compared to our own productions. The Early Orleans is also a popular market Plum, ripening with and after the Czar. The tree produces large crops, but the fruit is so liable to crack that a crop is often seriously damaged by a shower of rain.

During the month of August market Plums are plentiful; those of which I have actual experience are the Oullins Golden Gage, which I do not recommend anyone to plant. I have, I think, some 500 trees of this sort from ten to fifteen years old, and they have never yet paid the rent of the ground, the skin of the fruit being too thin for packing, and consequently it is difficult to send to market in good condition. Denniston's Superb is a most abundant bearer, and as it ripens some days before the Green Gage it commands a good price. The Belgian Purple is a large Plum of good quality, and in some places I understand it is a profitable fruit. Prince Engelbert, a large, oval, purple Plum, produces enormous crops. Sultan, a large, round, purplish red Plum, bears abundantly and always commands a good price; it is said to be one of the richest preserving Plums known. At this time we have Gisborne's, of which the Syston or Beef Plum appears to be a synonym, and the Pershore; these are followed by the Victoria, Prince of Wales, which has a bad habit of sometimes ceasing to grow; Belle de Louvain, a very large oval Plum, closely resembling the Red Magnum Bonum, but ripening some weeks earlier; Pond's Seedling, always commanding a high price; Diamond, a popular Plum in some districts; Monarch, a large and late purple Plum, which I venture to predict will some day be very largely planted; after this the Autumn Compôte and the Late Black Orleans, lasting until the second week of October.

There are some sorts which I have not named as market Plums, as I have not found them profitable in my district. These are Kirke's, which is very uncertain in its produce; Cox's Emperor, the fruit of which is produced in large clusters, and often rots on the tree, the skin being tender, like its parent the Early Orleans; Mitchelson's, a great bearer, but a very inferior Plum.

The Damsons come into bearing generally about the middle of September. The most prolific Damson that I know is the Crittenden, Cluster or Farleigh. The King of the Damsons, a sort of recent introduction, promises to be a valuable addition, as it is

very large and very prolific. The Prune or Shropshire Damson is well known and esteemed in the north.

The list of late economic Plums closes with the Bullace and the Wyedale Plums, the fruit of which will hang on the tree until late in November—a valuable quality, as it reduces the consumption of preserved fruit.

At the head of garden dessert Plums, as distinguished from market sorts, the Green Gage and its varieties undoubtedly stand. One variety of this family was introduced from France many years since, under the name of Reine Claude Diaphane, or Transparent Green Gage. When thoroughly ripe this can challenge the Green Gage for excellence; it also has the property of communicating a distinction to the seedlings derived from it. There are three which deserve a place in any garden. These are the Early Transparent Gage, the Golden Transparent Gage, and the Late Transparent Gage. Other Gage Plums of great excellence are the Bryanston, the Oullins Golden (although not an orchard Plum, it is an excellent garden Plum), the Purple, the Reine Claude du Comte Atthem (a Hungarian Red Gage of excellent quality), the Guthrie's Late Gage, and the Reine Claude de Bavay. Of Plums which are not Gages, but of fine flavour and quality, we have the Stint, the Early Favourite, the De Montfort, the Yellow Impératrice, the Jefferson, Angelina Burdett, Golden Esperen, Decaisne, Grand Duke, and Coe's Golden Drop.

The small Mirabelle Plums are very pretty and productive, and should be planted in gardens, as they make a delicious preserve. I hardly think, however, they would pay for market.

The Plum does not make a lofty tree, and does not therefore require very much space. My own system, which I have found to answer very well, is that of planting dwarf trees in rows 9 feet apart and 9 feet tree from tree, the stems of the trees being a clear 4 feet to the branches. I find that trees of this size are more easily managed than standards, especially in the gathering season. Damsons, particularly the Crittenden, may be planted much nearer than Plums; in fact, 6 feet is not too great a distance, so that the trees form fruitful hedges. I should recommend the distance, however, of 9 feet between the rows. Like the Cherry, the Plum is impatient of pruning, and this should be done in the autumn about the beginning of October. A calcareous clay appears to me to be absolutely necessary to the well doing of the trees.

There is, of course, an element of uncertainty in the production of fruit out of doors in this country, but this may be made a certainty by the employment of glass. The Plum adapts itself very readily to pot cultivation under glass, and as the fruit may be removed to the outside for ripening during the summer months, a glass house may be made available for a large supply. Fruit from pots grown in suitable soil is always of excellent quality, and when ripened under glass is singularly rich and good. The fruit will hang for some time when fully ripe. The facility with which Plums may be dried has hitherto been overlooked in England, but this industry is now in the process of development, and with the assistance of improved methods we shall not hear in the future of Plums rotting on the ground from the abundance of the crop, a waste which is sinful, as the plenty of one year is usually followed by the scarcity of succeeding years. It is in the hands of those who are interested in the land to prevent this waste, and one great factor of success will be that of holding meetings to invite discussion, which will have the effect of bringing about a wider and more extended knowledge of the fruit-growing districts of our country.

APPLES FOR THE MIDLANDS.

BY MR. A. H. PEARSON.

It is my pleasure to address you for a few moments upon the subject of "Apples for the Midlands," and in doing so I wish to look at the question from a market grower's point of view, *i.e.*, with an idea of planting for profit.

It may perhaps strike someone that the idea of planting for profit is out of place, when we look around our orchards and see the trees devastated with the caterpillar, and all prospect of fruit marred, if not blighted. Some will even go so far, I doubt not, as to say that Apple growing is a delusion and a snare, but I think there is no reason for us to accept their view. That we have all suffered loss this season, and many of us last season, is true, but I see no cause for despair; such things have happened in the past, and have passed away in due course. I have heard my father speak of a year when our Apple trees, which cover nearly 100 acres of land, had scarcely a leaf left upon them, and such a thing as a perfect leaf was hardly to be found. The whole of the trees had the appearance of being scorched, as if huge bonfires had been lighted under them, but in the course of a few days an immense flock of starlings found their way to the orchards, and in an almost incredibly short time they practically cleared off the caterpillar. It will be in the recollection of most of you that a few years ago the

Oak trees were in many parts of the country completely divested of their foliage by caterpillars, and some few died from the effects, but I never heard that any landed proprietors gave up the idea of planting Oaks in consequence, and the old Oaks to-day look as luxuriant as ever they did before their trial. The Potato disease has not yet frightened our brothers in the Green Isle from cultivating that most useful tuber, nor are we going to turn our backs upon fruit culture because of a few difficulties. It is not my business to speak to you upon the caterpillar pest, but if it were I should advise those of you who have large orchards, and especially those whose trees are large standards, to pursue a policy of masterly inactivity, and instead of purchasing Paris green, London purple, force-pumps, and other remedies, to keep your money in your pockets, protect the birds, manure the trees, and leave the issue with Nature.

It is not my purpose to take you through the dim vistas of the past, or to drag in any ancient history of the Apple, but before I can speak directly to my subject I feel it is necessary to say a word or two upon the style of planting to be adopted for profitable Apple culture in the midlands. There are, as you are fully aware, those who decry the system of planting standard Apples, and who extol the planting of bushes and pyramids, and others who just reverse things, and say Plant all standards, bushes are only fit for gardens, and they yield no profit. But is it not the truth to be found between the two rather than with either?

For those who live in districts where labour is abundant, for those who intend to give their own labour and attention to their plots of land, I believe there is no system to be compared with that of planting bushes or pyramids, and of tilling and cropping the land between with small fruits and vegetables. By this mode of culture we obtain a speedy return for capital invested, and above all we may by care and attention produce fruit of such size and quality that it shall command a ready sale at a good price, no matter what is the state of the market. My friend Mr. John Wright has so clearly set forth this system in his admirable little book, "Profitable Fruit Growing," that it will scarcely need doing again in our generation, and I shall say no more about it. On the other hand, much as I admire what our French neighbours call *petite* culture, I am fully persuaded both by reason and experience that those of us who live in districts where neither women nor children will work out of doors need not attempt it. Raspberries and Strawberries are paying crops where you have suitable labour, and superintend the work of gathering the fruit yourself, but just try the experiment of putting men at 3s. a day to the work, and where will the profits go? There will always be a large number of planters who will prefer standard trees, some market growers who will cultivate by horse power the land between the trees, using it for vegetable or for grain, and others who will plant orchards upon grass land, or lay the land down to grass after the trees are planted. To this latter class belong most of our agricultural friends, who wish to increase their home supply of Apples or to grow them for the market. Into the question of cultivated versus grass orchards I fear I may not venture further than to say this one word. Whatever merits cultivation may have when properly carried out, it has none when only half done and the land allowed to become covered with couch grass and weeds of every description. I would, therefore, advise farmers and landowners whose men are fully occupied during the summer with haymaking, root-cleaning, and harvest work, to shun cultivated orchards, and plant them in the old fashioned way upon grass, but give them a better system of treatment afterwards than has hitherto been the rule. My reason for introducing the question of standard versus pyramid trees is this. Having the fortune, or misfortune, to grow trees for sale as well as for fruit, I find the utmost difficulty to make people believe that the same varieties of Apples will not always succeed equally well in both forms. People see a bush in someone's garden bearing a profusion of fruit, and if they are about to plant an orchard they go to a nurseryman and ask for so many standard trees of that variety. It may be that although suitable for a pyramid worked on a Paradise stock, it is from its habit of growth quite unsuited for a standard tree. Let us take, as an instance, an Apple well known in this locality, the Court Pendu Plat, called in my neighbourhood Wollaton Pippin. There are few, if any Apples, which bear better in the form of a pyramid, and as the blossom expands later than that of any other variety, it escapes frost, and the tree is consequently not only an abundant but also a regular cropper; the effect is that but little wood is produced, and the tree is all fruit spurs. To plant such a variety in the form of a standard is a waste of land, as the tree can never occupy anything like the amount of space usually allotted in an orchard, and in most soils this kind is, as a standard, very short lived; even where it keeps alive it makes but little growth. We have trees in our orchards thirty or forty years old, the heads of which are not larger than a good sized Black Currant bush, and the growth of

which is so stunted and gnarled as to prevent the free flow of sap to the extremities, so that even when they bear fruit it is, from lack of proper nourishment, but small and worthless. I could name many other kinds, amongst which occur to me Potts' Seedling, Crystal Palace, Fearn's Pippin, or Clifton Nonsuch, Stirling Castle, and others. Again, there are varieties which are unsuited for standard culture because of the size of the fruit and its liability to be blown off by early autumn gales. We sell every year great numbers of Lord Suffield in the form of standards, but my experience would not lead me to plant it in that form. In making this remark I am not in the least afraid of injuring the sale of these trees; we grow them because the public will have them, and it takes a good deal of preaching both in public and in private to divert the stream of public opinion. For two generations we have inveighed against the Blenheim Orange as a standard, and to-day it is perhaps more popular than ever with small growers. Market men do not, it is true, plant it as they did, but as many trees are sold to-day as of almost any other variety. I take it that it is the especial province of the Association in whose name I speak to-day to combat all error, to make black marks against that which is bad, and to call attention to that which is good. The attendances at our conferences show that there is a new life and a spirit of inquiry abroad respecting these matters, and we may confidently hope that in the future knowledge will be more quickly disseminated and more quickly acted upon than in the past. It took thirty years to introduce Cox's Orange Pippin to the British public, and so loth was that respectable body to make a trial of anything new, that I have seen hundreds, and I think I may say thousands, of beautiful bushes of Cox's Orange stand year after year on the quarters until they ultimately reached their final repose on the fire.

I trust I have not wearied you with this rather long introduction, but I must confess I find the subject rather difficult of treatment. A bald list of names is rather tame reading, and, on the other hand, if one gives the rein to one's thoughts on so interesting a question, it is hard to say when or where to stop. Again, when I come to make my list I am confronted by another difficulty. Mr. Wright says there are 1400 varieties of Apples. It is comparatively easy to name fifty or sixty from them as being good, for that would be simply to transfer from a catalogue the list of kinds which, after three generations of trials and experience, we have selected for cultivation, but when we speak of Apples for profit we must still further reduce the list. I am thankful to say I have not had practical experience of anything like 1400 kinds, and I shall not trouble you with anything outside of those varieties which have been practically grown and fruited with us. These number about 200 kinds, most of which are at present in cultivation although some few have passed into oblivion, and more might do so with advantage.

My selection for standards will be the following:—1, Duchess of Oldenburg or Russian; 2, Warner's King; 3, New Northern Greening; 4, Bramley's Seedling; 5, Beauty of Kent; 6, Pike's Pearmain, or King of Pippins; 7, Improved Keswick; 8, Ecklinville; 9, Newton Wonder. There are other varieties with strong claims, whose voices seem to ask "Why am I left out?" but for profitable culture the number is probably sufficient. For general utility and for a succession of fruit I should if reduced to a very small number take the first three.

It will, I know, surprise my friends from the south to find Duchess of Oldenburg included at all in my list, still more that she should be placed amongst the first three. I have, however, long been of the opinion that if, as Dean Hole said of Roses, he lived in a pike (or toll bar), and had only one Rose it should be Gloire de Dijon, so I, under the same circumstances, would choose the Duchess as my sole Apple. With us in the midlands it is a heavy and regular cropper, and its size, colour and appearance always command for it a ready sale. Ripening in September it is ready for market before the foreign supply is in, and if desired it can at the expense of size be pulled before it is ripe, and finished off in the baskets. The large fruit are quite unequalled for making Apple jelly, and the small fruit may with a fairly clear conscience be sold as table fruit. Is there any Rose without a thorn? Let it be whispered that her grace is a true aristocrat, being possessed of a skin so tender that every finger mark shows in a very short time after pulling; but if left in quiet repose for two or three days these marks will disappear.

Warner's King is a first-rate culinary Apple; the tree is a free and vigorous grower, a good bearer, and although the fruit attains an enormous size it is not a bad one for blowing off; probably this may be accounted for by the fact that its footstalk is short and deeply inserted, so that the fruit rides on the branch.

New Northern Greening is so called to distinguish it from the old variety, which is so well known, and from which it is probably a seedling; it is, however, no novelty, as we have grown and fruited

it for forty years, and I find it catalogued for sale in 1846. The tree is a strong and vigorous grower, a good cropper, and as the fruit is in use from November to April it may justly claim to be one of our most useful Apples. It has the merit of being a very early bearer, young standards in the nursery being frequently covered with fruit, and for market has the advantage of weighing well. This variety, with Bramley's Seedling and Newton Wonder, should be planted at the sides of an orchard, where they would from their habit of growth protect less robust kinds from the influence of rough winds.

Bramley's Seedling, although only known to the public since the Apple Conference of 1883, is an Apple which has been known locally for thirty years. The tree is a very vigorous grower, of spreading habit, a constant but not an early bearer; fruit large, heavy, and handsome. Distinctly a seedling from the old Caldwell or Rymer, the fruit of which it so much resembles that when medium-sized fruits are mixed with fine fruit of that variety the best judges have been unable to distinguish the one from the other; it has, however, a better habit of growth, is a better bearer, and produces, as a rule, a finer fruit.

Beauty of Kent is perhaps the handsomest cooking Apple in cultivation; tree a strong and vigorous grower and a good bearer, liable to canker in some soils, or I should have given it the preference over Warner's King for the first three.

King of Pippins is far and away the most profitable table Apple in cultivation; in fact, so far, the only one which has proved profitable for orchard culture.

Improved Keswick Codlin.—This, like the New Northern Greening, seems to be unknown in the south, and does not appear in Dr. Hogg's "Fruit Manual" of 1875, although it has since been brought to his notice. This Apple possesses all the virtues of the old Keswick, with the addition that the tree is a better grower and the fruit a shade larger. Everyone knows that the Keswick may be used for cooking at almost any time from early in July to September, and no Apple will stick on the tree better when ripe than this variety. When a heavy Plum crop and Damson crop interferes with the Apple pulling we have frequently left them hanging until October. The tree attains a medium size, is an immense bearer, and will grow in almost any soil or situation.

Ecklinville.—An Apple of Irish origin. The tree is a fair grower, attaining medium size; fruit large, handsome, and of good culinary quality; an immense bearer.

Newton Wonder.—An Apple of recent introduction, sent out from Chilwell, received first-class certificate R.H.S., 1887. The tree is a vigorous grower, makes a handsome standard, and equally suitable for pyramid culture; fruit large, very regular in outline, handsome, highly coloured, and weighs very heavily. Modesty compels me to place this Apple last on the list, although I think it will prove to be worthy of a higher position. I am fully prepared for the quotation that everyone's geese are swans, and I shall not be surprised if someone asks how it is that such comparatively new Apples should be selected. My answer will be that the selection has not been made without carefully testing and weighing the merits of each, and surely it will be conceded that our old orchards need improvement in the varieties grown and the method of culture employed. The days of "Bess Pool," bearing once in seven years; Blenheim and Alexander once in five; "Bartons," bearing every year, but too small for sale when grown, are numbered, as are many others I could name; so I trust is the system of "sticking in a tree" and leaving it without further attention until death comes to its release. To those intelligent cultivators who are improving their orchards by re-grafting with improved kinds I may say that any and all of those named (except Ecklinville, of which I have had no experience in this matter) will succeed well and bear heavy crops. It is unnecessary to tell you that weak growing kinds only kill the stocks upon which they are grafted.

Varieties for Pyramid Culture.—1, Potts' Seedling; 2, Lord Suffield (or where that cankers Lord Grosvenor); 3, Ecklinville; 4, Frogmore Prolific; 5, Lane's Prince Albert; 6, New Northern Greening. To these half-dozen cooking Apples may be added Duchess of Oldenburg, Domino, Cox's Pomona, Cellini, Small's Admirable, New Hawthornden, Stirling Castle; and for dessert, 1, King of Pippins; 2, Margil; 3, Court Pendû Plat (already mentioned); 4, Fearn's Pippin; 5, Cox's Orange Pippin; 6, Scarlet Nonpareil; 7, Worcester Pearmain. These are all kinds easily adapted by their natural habit to pyramid culture, also early and abundant bearers. They are all so meritorious that to single any out for especial praise seems almost invidious, yet I cannot help saying that those who have not grown Potts' Seedling as a pyramid will be pleased with it. Its habit is most charming, foliage bold and distinct, and whether with fruit or without an object of

beauty. When I say without fruit I mean when fruit is not in season, for it is rare that you fail to find it carrying fruit at the proper season. It would be gilding the Rose for me to make any remarks upon Cox's Orange Pippin to-day, since it has just attained its sixtieth birthday, and is now pretty well known to the public; I will only in passing remark that it should be grown in a dwarf form, either bush, pyramid or espalier, and not as a standard. In conclusion, one word in favour of a very old friend—"Margil." In some parts of the country it goes by the familiar name of "Never-fail," and if you will plant it in a situation where it is not too much exposed to spring frost, you will find it well deserves the title.

Perhaps to those of weak digestion it has not so strong an attraction as the more tender Cox's Orange, yet to many its flavour is unequalled, and, unlike its supposed parent the Ribston, it does not canker.

HARDY BULBOUS PLANTS.

NARCISSI AND DAFFODILS.

A FEW words at this time, while being seasonable, may serve to act as a reminder to any who are anticipating lifting and re-planting their bulbs, while to delay longer will prove detrimental to some of the varieties. Though a great number of the Trumpet Daffodils, if not all, lose the whole of their roots annually, I am not so sure that the rule applies with equal force to some forms of the Poet's Narciss, for it matters little what day in the year you may examine a bulb, provided, of course, it is healthy and sound, you will invariably find it more or less active at the root, *i.e.*, the fibres, and this is decidedly more conspicuous in wet seasons like the present. The roots of the Poet's Narciss retain their vitality for a longer period than some others, so that it will not do to wait for the perishing of these while still left in the ground. During the summer of 1888 the double white Poet's Narciss not only retained all the old roots, but continued to push new ones also, and the same thing occurred again this year in the same variety, also with ornatus, and in a less degree with recurvus and poetarum. From a knowledge of these facts I invariably begin lifting the varieties of poeticus first, notwithstanding that they are amongst the last to flower, and of course proportionately later in attaining maturity. In all cases where possible these should be lifted with the laying down of the foliage, and particularly so in wet seasons. The month of July is an excellent one for the operation, and depending on the nature of the soil and surroundings, early or late, as the case may seem to require. As might naturally be expected, there is considerable variation in this respect in so extensive a group, having such a prolonged season of flowering, and naught but that experience which is the outcome of practice and close observance in various soils and seasons can prove of much value.

In like manner, when planting time comes the forms of N. poeticus should be the first planted. Indeed in all private gardens where these are grown it is much best to lift, clean, and replant with as little delay as possible, keeping the bulbs in the meantime in any dry airy shed away from hot sun. On no account should they be kept in boxes with lids—this is most certain to end disastrously—but place them in thin layers in open trays, where a free circulation of air is continually going on around them. Always endeavour to have them planted before any signs of emitting new roots appear, the first appearance of which is the white ring at the base of the bulbs immediately above the position occupied by the roots of the previous season, and this white ring gradually increases in size as the season advances till roots are emitted.

In the matter of planting I am not sure if many bulbs are not planted unnecessarily deep, for deep planting has not the slightest advantage, but the reverse. A not unusual depth to be recommended is 6, or even 9 inches; but in my opinion a far more reasonable one is 3 to 4 inches, or as forming a guide throughout the entire genus they may be planted at twice the depth of the bulbs, measured from the base to the point where the bulbs commence tapering to the neck. Deep planting, and particularly where these bulbs are grown in quantity, has the following disadvantages:—First, the greater depth you insert your bulbs the less the depth of good soil for the roots to descend into, an item of importance in shallow soils at least; secondly, deep planting necessitates far greater labour both in lifting and planting, merely in the removal of the soil; and thirdly, by shallow planting good-shaped bulbs—*i.e.*, round, plump, and short necked—are a certainty; not so, however, with deep-planted bulbs, as the following will prove to illustrate:—Some years ago I had occasion to lift some bulbs of the Tenby Daffodil, planted by a predecessor at 9 or 10 inches deep, but which when lifted were not recognisable by the

bulbs alone, and instead of the neatly formed round solid bulb one expects when taking up this kind, the whole, hardly without exception, had long tapering bulbs, most nearly allied, as far as shape is concerned, to a thin bulb of *N. maximus*. I attributed this deformity to over-deep planting, being caused probably by the weight of the soil above becoming too great. The following year when these bulbs were lifted again, and had only been covered with 3 inches of soil, they were entirely transformed into those round, solid, compact bulbs characteristic of the species under notice. Another very similar case was related to me by a gentleman who grows one of the finest collections of Daffodils in this country, but his experience was with the double forms of *N. cernuus*; these had been planted at more than ordinary depth to commence with, and had been heavily mulched, either with spent hops or manure (I forget which), in winter time, with the result that the whole had more or less disfigured bulbs—in short, they were all considerably elongated, which I imagine goes to prove that deep planting, as a rule, is anything but an advantage to the bulbs alone, apart from the extra labour entailed where large collections have a permanent home.—J. H. E.

RED SPIDER ON VINES.

RED spider is difficult to eradicate during the current season's growth when once it has obtained a hold of the plants. Red spider is encouraged in many cases by overcrowding vineries with plants, which often results in the neglect of the borders in which the Vines are growing, and often of the Vines themselves. Vines growing in a well drained and properly prepared border require abundant supplies of water all through the season of active growth, and even in the winter the borders should not be allowed to become dry. A dry rooting medium means a check to the vigour of the plants, and all gardeners know that checks to growth of this nature invariably result in disease to some plants, and in others to the attacks of various insects. Another cause of this dreaded parasite making its appearance on Vines is deficient or unsuitable ventilation. Vines at all stages of growth require constant supplies of fresh air, and it has long been recognised as a safe rule to follow to begin early in the season, to allow a little air to be admitted at the back ventilators at night, avoiding, of course, draughts and the admission of too much during the prevalence of dry east winds. This, too, should be supplemented by timely attention to increasing the ventilation on hot bright mornings when the Vines are in full growth and very susceptible to sudden changes. Nothing is gained by having too high a temperature except in the case of some special kinds.

The management of the atmosphere of the house is very important in preventing the appearance of red spider, as unless the Vines can spread out their leaves in a moist and healthy atmosphere, so that they can absorb from abundance to meet their demands, they will certainly become liable to the speedy attacks of red spider, which lives and thrives and spreads in a dry condition of the atmosphere. Moisture is fatal to these insects, or at least to a slight attack, as has been proved in the case of Cucumbers attacked, which have been almost if not quite cleared of the pest by shutting the house close, having the pipes warm, and enveloping the plants in a steaming mist for some hours. Some gardeners have proved the disastrous effects of introducing Strawberry plants in pots into vineries, as they are sure to be attacked by the pest, which certainly will spread to the Vines despite the best attention. Growing Azaleas in vineries often induces attacks of red spider, particularly when the plants are old and root-bound.

The old remedy of applying sulphur to hot-water pipes to destroy the red spider is becoming obsolete. A better plan is the application of some of the excellent insecticides in the form of brushing or sponging the leaves infested. Fir tree oil has been found to be of great service, and a solution of it at the rate of 1 pint to 15 pints of water well mixed, will, if carefully sponged on the infested portions of the foliage, serve to destroy the pest. This may be a tedious operation in a badly infested house, but patiently persisted in, along with syringings with a weaker solution—say, about 1 pint of oil to between 30 and 40 of water—will in the end prove successful.

Some allege that the practice of syringing Vines renders them more liable to insect attacks by producing a soft and flabby growth, which having to endure the slightest unfavourable conditions soon becomes a ready prey to enemies. I am inclined to think, however, that this is an extreme of the opposite kind, and can only hold good in cases where too much attention is paid to syringing, and too little to the moisture requirement of the roots. The secret of having healthy Vines consists in maintaining an equal balance of vigour between root and branch, and this can best be done by the judicious application of food and water to the former, and of

air, heat, and moisture to the latter, with all the other necessary details of intelligent cultivation.—E. D. S.

CLITORIA TERNATEA.

THE large family of the Leguminosæ yields us abundant useful garden plants, but those with blue flowers are not too frequent in this or any other section of the plant world. One of the best examples of a really handsome blue flowered plant is *Clitoria Ternatea*, of which a specimen is represented in fig. 16. This is seldom seen in gardens,



FIG. 16.—CLITORIA TERNATEA.

and yet the brilliant colour of its flowers ought to render it a general favourite.

It was one of the plants which was well grown at Chatsworth in Paxton's time, and he thus wrote concerning it:—

"This handsome plant was first brought beneath the notice of botanists and floriculturists as long ago as the year 1739. From that period down to the present it has been erroneously considered by many as an annual species, and slighted accordingly. Such an opinion probably had its rise in the mode of culture which has occasionally been pursued. Instead of treating it as a stove plant, it was, from the facility with which it ripens seeds, raised anew each spring as a half-hardy annual, and transferred to the open flower border; where, being unprotected on the approach of winter, it was destroyed by cold.

"From circumstances similar to the above, this plant has not been an isolated example of false notions being imbibed respecting its habits. Notwithstanding the evident bent of cultivators rather to supply a plant with too high a temperature than to suffer it to be too much

exposed, here is an instance, out of several others that we might mention, in which a contrary method has been practised. When, on the other hand, it is retained in a stove, to which a moderate amount of heat is furnished, it assumes quite another appearance. The stems, instead of perishing yearly, become shrubby at the base, the lower leaves remain through the winter without withering, and it is the upper branches alone that exhibit any signs of decay. Its natural habit is, therefore, decidedly suffruticose, and that to which it has been reduced in our gardens is simply a constrained one.

"Miller, the celebrated author of some of our first works on gardening, states that the seeds were primarily introduced to Europe from Ternate, one of the Molucca Islands; from which cause, it was originally established as a genus by Tournefort, under the name of *Ternatea*. Linnæus, however, thought it requisite to alter this, and apply the generic title it now bears. Miller again observes that there are double-flowered varieties of *C. Ternatea*, some with blue, and others with white blossoms, which will not ripen seeds with us, and these must consequently be imported from the East Indies. He adds, that seeds which he received in three different years invariably produced plants which bore double blossoms; and, as registered in the *Botanical Magazine*, 'the same happened to Commelin in two succeeding seasons, which is difficult to account for, if they are only accidental varieties of the single-flowered kind. The leaves of the double sort, as figured in the 'Hortus Amstelodamensis,' are sharp-pointed, so that perhaps what we have followed others in recording as only varieties, may be two distinct species.'"

BASKET FERNS.

A CLASS was provided at the recent Chiswick Fern Show and Conference for basket Ferns, but in the group the distinction between Ferns for pots and those for baskets was not made very clear. A few notes on the subject may be useful.

I have tried several *Adiantums*, and amongst those I like best is *Adiantum concinnum* var. *latum*, a variety that Messrs. Veitch sent out some years ago. It is, however, a semi-deciduous Fern, losing a quantity of fronds through the winter season. It is very useful either for pots or baskets. The graceful manner in which the fronds hang over the sides of the baskets renders it a desirable acquisition for either the warm or cool stove. *A. concinnum latum* is a more robust plant than the type. The stipes are about 12 inches long, shining and black. The entire fronds are between 2 and 3 feet long, and from 12 to 15 inches broad. It grows much better in a compost of sandy fibry loam with a little leaf soil than it does in the soil generally used for Ferns. By using a stronger soil for *Adiantums* the pinnæ come much finer. The typical form is rather widely distributed, and found growing in tropical America from Mexico to the West Indies southward to Peru and Brazil.

A. Williamsi is better suited for baskets than pots on account of the rather slender arching stipes, and somewhat resembles *A. chilense*. The caudex is creeping, and soon travels to the side of the pots. In the event of its habit being the same in baskets, which in all probability it will, this will make one of the best of *Adiantums* for baskets. As soon as the rhizomes travel to the sides of the basket they should emit young fronds, and no doubt grow through the sides and bottom of the basket. The young fronds as they appear, and until they are fully developed, are covered with a yellow sulphur-like dust; as the fronds get matured they lose this character. This is its first season in a basket, and so far it has more than realised my expectation. It thrives well in a cool stove temperature, although it is a native of Peru, and found growing on mountains at an elevation of 12,000 feet.

A. peruvianum is a noble Fern, and well adapted for baskets; it is compact in habit, a very fine and well-marked species. It is by no means common in collections, and richly deserves to be more extensively grown. As the specific name implies, it is a native of Peru. I find it succeeds remarkably well in a cool stove temperature. *Asplenium cicutarium* is an extremely beautiful Fern either for pots or baskets, and in the opinion of many is the most handsome of the genus. It is a well-grown plant; the fronds attain the length of about 15 inches, and from 4 to 6 inches broad, with from ten to fifteen horizontal pinnæ on each side; the texture is rather thin, and a very pleasing bright green colour. The fronds arch gracefully over the sides of the basket, and is a great acquisition to the warm fernery. It is a native of tropical America, and delights in a warm, humid atmosphere.

Asplenium longissimum is a very useful Fern for baskets, in fact that is the only way in which it can be satisfactorily grown. For lofty situations this is one of the few Ferns that is really suitable. The fronds droop immediately over the sides of the

basket, and hang down to a length of 6 or 7 feet. This is one of the prolific species, forming young plants at the end of each frond. After the young plants are formed the stock can readily be increased by taking them off with a small portion of the frond, and pegging them down on a pot filled with sandy soil. It is a native of Java, Borneo, Malacca and Mauritius, and grows best in a cool stove temperature, although I have a plant in the greenhouse doing fairly well, but not so free-growing as the plants in a higher temperature.

A. furcatum answers well for a large basket. This is a well-known species, and common in collections; it is a rather strong-growing species. The fronds grow to a length of between 18 inches and 2 feet long, and from 4 to 6 inches broad. It is a very accommodating Fern, and answers well either in a cool stove or greenhouse temperature. *A. flaccidum* is another well-known species, and a very useful Fern; for basket work it is amongst the best natives of Australia and New Zealand, and seems quite at home in a cool temperature. In a well-grown plant the fronds grow to a length of between 2 and 3 feet, and from 4 to 8 inches broad.

Davallias are numerous, many of which answer better in baskets than pots. Amongst the number I have grown, and which do remarkably well, are the following:—The first, which is a great favourite with most people, and which is commonly known as the Hare's-foot Fern, *D. canariensis*, is too well known to need much said in its favour. The stout creeping rhizomes, which are densely covered with pale brown linear scales, are very suggestive of a hare's foot, from which character it has its local name. The rhizomes creep over the surface, sides and bottom of the basket, sending out at intervals its quadripinnatifid fronds, which are nearly 18 inches long and a foot broad. It is a native of the Canary Islands, N. Africa, and Madeira, and always thrives in a rather cool temperature.

D. ciliata is a most valuable plant for baskets, and should find a place in every collection. The rhizomes are much the same as *D. canariensis*, but not so thick, and densely covered with sharp-pointed ferruginous scales. The deeply cut lanceolate fronds grow nearly 2 feet long and from 6 to 8 inches broad. The rhizomes travel over the surface, bottom and sides of the basket; as they extend they should be pegged in close to the basket. At intervals they send out fronds which look exceedingly pretty growing in different directions. Being a native of the Philippine Islands, it requires a stove temperature.

D. immersa is a handsome Fern for a basket or pot work. Before the young fronds are perfectly developed they have a peculiar brown tint, and to a stranger look as though they have suffered some injury. The tripinnate fronds measure from 12 to 18 inches long and 6 to 9 inches broad, and are very useful for cutting purposes. The rhizome is wide, creeping, and peculiar in developing underneath the surface of the soil. There are several other *Davallias* that are well adapted for basket work, such as *D. charophylla*, *D. dissecta elegans*, *D. hirta cristata*, *D. Mooreana*, and *D. repens*.

For large mixed baskets the *Nephrolepis* are exceedingly useful; *N. exaltata*, *N. acuta*, *N. cordifolia*, and *N. davallioides* are all worth growing. *N. davallioides* var. *furcans* is a valuable Fern, and well deserves to be grown in a basket; the large drooping fronds furnished with pinnæ of great size and substance renders it a desirable plant in any collection.

Polypodium pectinatum var. *Paradisæ* makes a splendid basket Fern, and well suited for a position where a spreading plant is required. In pots it appears out of its element, for the fronds with me grow about 4 feet long, slender, and gracefully arched; the frond is cut down to the rachis into close blunt horizontal pinnæ. This variety is a much more handsome Fern than the type; it is a native of the West Indies and Mexico, and grows well in a stove temperature.

Polypodium (Goniophlebium) subauriculatum is amongst the most suitable of all Ferns for baskets. It requires to be suspended in a rather lofty position on account of the long pendulous fronds, which attain the length of nearly 8 feet in a well-established plant. It is a rapid-growing Fern, and when once thoroughly established soon makes a handsome specimen. It has a wide creeping rhizome covered with dull brown scales. The rhizomes often grow through the sides of the basket, in time sending out fronds. The pinnæ are about 4 inches long and three-quarters of an inch broad. It is a native of the East Indies, and widely distributed, therefore enjoys a warm stove temperature.

Woodwardia radicans is a well-known species, and well suited for pots or baskets. It is a strong-growing Fern, and when growing likes copious supplies of water. For the conservatory or greenhouse it is invaluable. The fronds grow from 4 to 6 feet long, and from 12 to 18 inches broad. The old fronds are prolific, producing young plants at the points. If grown in a basket it

should not be crippled for root room, using good rich soil for the occasion.—A.



EVENTS OF THE WEEK.—On Tuesday next the Committee meetings of the Royal Horticultural Society will be held in the Drill Hall, James Street, Westminster; and a meeting of the Williams' Memorial Fund Committee will be held at the Horticultural Club at 2 P.M. on the same day.

— **LATE COMMUNICATIONS.**—In consequence of the pressure incidental to the holiday season, several communications arrived too late for insertion in the present issue of the *Journal of Horticulture*.

— **LONDON PARKS AND GARDENS.**—We are informed that the London County Council have not appointed a Superintendent of the Parks and Gardens under their jurisdiction from any of the forty-nine applicants for the position, and that the whole question is deferred for further consideration.

— **THE GARDENERS' ORPHAN FUND.**—At a meeting of the Committee held at the Horticultural Club on Friday evening last, William Marshall, Esq., Bexley, was unanimously elected as the successor of the late Mr. George Deal. Mr. Marshall has been a member of the Council of the Royal Horticultural Society, and is the able Chairman of one of its Committees. Though free from all business engagements, Mr. Marshall is an active business man, and the Committee feel fortunate in securing his services as Chairman of the Fund during the ensuing year. The recent anniversary dinner was financially successful, and it was decided to invest the sum of £500 in consols.

— **BANK HOLIDAY IN LONDON.**—Monday last being a fine summer's day the parks, gardens, and open spaces in the metropolitan district were attended by thousands of visitors. In the beautiful park of Canon Bridges at Beddington a cottagers' flower and vegetable Show was held, mainly through the exertions of A. H. Smee, Esq., who is Chairman of the District Cottagers' Horticultural Society. Suitable amusements were also provided, and crowds of visitors attended. The prizes awarded, also for allotments and cottage gardens, were distributed by the esteemed Canon, who rejoices in seeing all his neighbours happy around him. Nearly £50 was taken for admittance to the park. It is stated that 100,000 persons visited Kew Gardens.

— **GARDENING APPOINTMENTS.**—Mr. D. Tapp, late gardener to R. S. W. Sitwell, Esq., Stainsby House, Smalley, Derby, has been appointed head gardener to Colonel Sturt, Llanvihangel Court, Abergavenny, Monmouthshire.

— **CIBOTIUM SCHIEDEI.**—In the tropical fernery at Abberley Hall, Stourport, is a large and handsome specimen of this Fern. It requires plenty of space to show its character. In the fernery mentioned it is planted out on a high rock, as if planted low its beauty would be partially lost. All the Ferns are planted out on a well arranged and artistic rockery, and which has a pleasing effect.

— **DAVALLIA BISSECTA.**—Amongst several varieties of Davallias planted in the above fernery this is the most vigorous. It covers a space of 2 or 3 square yards, and is very healthy. The rhizomes creep over the surface of the rock, and attach themselves very firmly. Moisture is abundantly applied, and which is all it has for support. This is the Fern which is largely used by florists for greenery in wreaths, &c. Those who have only grown it in pots or pans have no idea of its vigour.—J.

— **CRACKING IN MELONS.**—It is annoying after having grown a good crop of Melons to have the fruits crack just previous to the last stage of ripening. Various reasons are assigned for this defect, and also remedies to combat the evil. Too much moisture at the roots is the generally accepted cause, and to combat this cutting through the fruit-bearing lateral is recommended. Too much moisture at the roots I am not prepared to admit is the cause of the evil, as we are in the habit of applying more water to the roots than most

people, but there is far more danger in closing the ventilators early in the afternoon, and running up the temperature above the point it reached before the ventilators were closed. I have proved this in our own case, as at one time we were in want of a fruit at a certain date, and to hasten the ripening I closed the house so as to retain the sun heat, with the result of having cracked fruits the following morning. Warmth in the pipes and air as recommended by me for preventing scalding and cracking of Grapes will also prevent cracking in Melons.—A. YOUNG.

— **THE PARTIALITY OF THE RAIN.**—It seems to me, from reading the various meteorological reports from different parts of the country, that the rainfall of 1890 has been extremely variable and partial. Our first really good rain of the year was on July 17th, when we registered 1·60 inch, on the 18th we registered 0·30 inch, making nearly 2 inches in forty-eight hours. Till then the rain had not reached the depth of the roots of the early Potatoes we were digging. Our rainfall for the first six months of 1890 is as follows—viz., January 2·96 inches, February 0·72 inch, March 1·06 inch, April 1·66 inch, May 2·09 inches, June 1·66 inch.

— **I REGRET** to say that POTATO DISEASE has made its appearance in this district and seems spreading very fast, but trust we may get dry summer-like weather, which may arrest its progress. I mean to try a French remedy—viz., 1 lb. blue vitriol in ten gallons water, and 3 lbs. lime dissolved in two quarts boiling water mixed together, to be sprayed over the tops with fine-rose watering pot. Its application is easy and the materials cheap, and in common use for dressing seed Wheat.—R. MAHER, *Yattendon Court Gardens, Newbury*.

— **JULY WEATHER IN SUSSEX.**—The total rainfall at Cuckfield, Mid-Sussex, for the past month was 3·72 inches, being 1·06 inch above the average. The heaviest fall was 1·06 inch on the 4th. Rain fell on eighteen days. The highest temperature was 75° on the 23rd, lowest 42° on the 4th. Mean maximum 65·1°, mean minimum 50·1°; mean temperature 57·6°, partial shade temperature 2° under the average. Little rain fell after the 19th, and we had one fine week from that date, and things have much improved.

— **JULY WEATHER IN HERTFORDSHIRE.**—Mr. E. Wallis, The Gardens, Hamels Park, Buntingford, Herts, writes:—"The past month here has been noted for the great amount of rainfall and dull cold days, rain falling incessantly the first half of the month. The nights have been generally very cold, thermometer falling on many mornings nearly to freezing point, and tender plants, such as Iresine, have shed their leaves and become little else than bare stems. On eleven days the thermometer rose no higher than 65°, and in some days not above 60°. The highest point reached during the month was 76°, and that only upon one occasion. The total amount of rainfall for the month was 4·81 inches."

— **ROMAN HYACINTHS.**—The flowers of Roman Hyacinths are especially valuable in November and all through the darkest winter months when white and sweet-scented flowers are scarce. They are so useful for cutting for many purposes, the spikes either being used alone, or individual flowers wired and used singly in bouquets. It is necessary, in order to have flowers early, or from November onwards, that batches of bulbs be potted, according to the demand, from August to October. Early potting is practised, so that the bulbs can have a fairly long period in which to make a quantity of healthy roots, without which no bulbs intended for forcing can be expected to flower well. The earlier any kind of bulb is forced the more roots it needs to make before top growth, and then success in flowering it is better assured. Six or eight bulbs are generally potted in 5 and 6-inch pots, and where the demand for cut flowers is great, pans are employed. A moderate light compost of fibrous turf, leaf soil, sand, and manure will grow these bulbs well enough. After potting, there is no material better for plunging them in than cocoa-nut-fibre refuse, and under a quantity of this, in any cool corner, the pots should be plunged, and there remain until plenty of roots are formed and top growth is just beginning. Then bring out the pots, keeping in a subdued light for a time, afterwards giving them a light position in a greenhouse, and, when the flower spikes show, help them to develop, slowly but surely, by the aid of a little bottom heat, if required, at any particular time. This is the most necessary at the end of November onwards to the turn of the year, when the conditions to natural growth are somewhat sluggish. It is necessary, too, to plant bulbs as nearly as possible of the same size and quality in each pot, so that growth will be regular.—E. D. S.

— PROPOSED MEMORIAL OF THE LATE MR. B. S. WILLIAMS. — Interest in the proposed memorial of the late Mr. Benjamin Samuel Williams, of the Victoria and Paradise Nurseries, has acquired force since our reference to the subject a fortnight since, and the desire to participate in it appears to have greatly extended. A meeting of horticulturists is announced to be held in the Hotel Windsor, Westminster, on Tuesday next, August 12th, at 2 P.M., when probably decisive steps will be taken to give form and purpose to the proposal. A circular has been published, from which we learn that "it is proposed to establish a 'Williams' Memorial Fund,' to provide at horticultural exhibitions money prizes and certificates for the encouragement of the cultivation of stove and greenhouse plants and Orchids, these prizes and certificates to be competed for in the usual way." It is added that "To carry out the proposal a Committee is in course of formation, to include representatives of all horticultural interests associated with or related to the special sphere of activities of our late friend, who was especially distinguished as an importer, cultivator, and raiser of tender exotic plants, to which the proposed Memorial prizes would especially apply. The Committee will collect subscriptions, advise on procedure, and in all convenient ways promote the completion, with all reasonable speed, of a fund sufficient for the purposes indicated." It is desired that communications on the subject be addressed to H. J. Veitch, Esq., 544, King's Road, Chelsea, S.W.; or Shirley Hibberd, Esq., Kew, near London.

— DEATH OF MR. PATRICK BARRY. — This eminent horticulturist, a member of the firm of Ellwanger & Barry, died at his home in Rochester, N.Y., on the 22nd of June, at the age of 74. Mr. Barry was the son of a farmer, and was born near Belfast, Ireland, in 1816. He was liberally educated, and at the age of eighteen was a teacher in the National Schools. In 1836 he resigned his position and came to the United States, where he was soon engaged as a clerk by W. R. Prince, of Flushing, Long Island, a prominent firm in the nursery business. There he laid the foundation of his after success. In 1840 he went to Rochester, and the firm which existed fifty years in ever increasing vigour and fame was then formed. Mr. Barry wrote largely for agricultural and horticultural periodicals. He was the editor of the *Horticulturist* after the death of A. J. Downing, and during the period when that journal was owned by James Vick, and published in Rochester. This was in 1852, and for several years subsequent, until the publication office was transferred to Philadelphia. He was at one time the horticultural editor of the *Genesee Farmer*. In 1852 he published "The Fruit Garden," a standard work on the raising and management of fruit trees, and fruit-growing in all its various branches. A second edition, revised and enlarged, bringing the work up to the present time, was published in 1885. His greatest work, however, was the "Catalogue of the American Pomological Society," which is the accepted guide of American fruit-growers, and is high authority with fruit culturists the world over. Mr. Barry for more than thirty years was President of the Western New York Horticultural Society. He was President of the Western New York Agricultural Society and a member of the controlling Board of the New York State Agricultural Experiment Station. — (*American Agriculturist*.)

— VINE DISEASE IN CALIFORNIA. — The British Vice-Consul at Los Angeles, in California, in his last report, has some observations on the Vine and Orange pests in that region. The Vine disease now seriously menaces the existence of the viticultural industry in the vicinity of Los Angeles. At first it attacked chiefly the "mission" Vines; now, other varieties of red Vines are dying, and the white varieties are also suffering. The disease first appeared in its present dangerous form in the southern part of California, and destroyed many vineyards. Prof. Dowlen, an expert employed by the Viticultural Commission to ascertain its cause, and, if possible, discover a remedy, inclines to the opinion that it is due to a fungus. On the other hand, Mr. Wheeler, Chief Executive Officer of the Viticultural Commission, reports that he is fully convinced that the fungus found on the dead Vines is not the prime cause of their decadence, and that it attacks them only when they have been weakened by other causes. As to the *Icerya*, or "white scale," which has ravaged the Orange groves, the Vice-Consul says that a year ago many of the principal Orange growers in the vicinity of Los Angeles had abandoned their efforts to exterminate this pest, concluding that their trees must die. Fortunately, it was learned that an Australian parasite, the *Vedolia cardinalis*, had exterminated the white scale in Australia. A colony of the bugs was imported, and placed on the trees in an orchard in Los Angeles; they multiplied so

rapidly that in a few months the scale was entirely exterminated in the district; many trees, which a year ago were nearly dead, have revived and borne half a crop this season. — (*Nature*.)

— THE BIRMINGHAM GARDENERS' IMPROVEMENT SOCIETY. — We have received a descriptive report of a visit of the members of this Society to Reading ten days ago, too late for insertion, and all we can say is that the 120 members appear to have been delighted with the pleasant reception accorded them by Messrs. Sutton & Sons for inspecting their establishment and trial grounds.

— FRUIT RIPENING EARLY. — With us hardy fruit is ripening earlier, or by about a fortnight earlier than last season, and a few days in advance of the average time of commencing to gather. This must be largely due to the fact of the trees on walls generally being in flower at an exceptionally early date, many of the Pears being in flower by the first week in April, as it is very certain the weather this season has been anything but favourable to early ripening. We commenced gathering Early Moorpark from a south wall on July 25th, and the other varieties are following very closely. Plum De Montfort (a superior early dessert variety) was fit to gather July 24th, Rivers' Prolific and Morocco being ripe about the same time. Oullins Golden, Victoria, and Dry's Seedling will be ripe by the end of the first week in August, and the Green Gage is swelling fast. The earliest Pear, Doyenné d'Été, was fit to eat July 24th, and to all appearances both Jargonelle and Williams' Bon Chrétien will not be long in ripening. Beauty of Bath is our earliest Apple, and we gathered a few fruit of this July 30th; the principal portion of the crop (a good one by-the-by) will be available for dessert purposes during the first fortnight in August. Irish Peach is changing colour and will soon be ripe, while Devonshire Quarrenden will not be far behind. — W. IGGULDEN, *Somerset*.

APPLES—STOCK INFLUENCES.

It is not often that such a marked difference is apparent in the Crab and Paradise stocks as in the present season. We presume the surface-rooting Paradise Apple trees have not felt the effect of a wet winter so much as the deeper rooting Crab Apple, and probably from the same cause. The trees upon the Paradise were better ripened, but in appearance this ripeness is equal in both cases, as a much larger number of the maidens have started from the terminal shoot than usual, but when it comes to fruit the Paradise trees have it all their own way, although in many cases the trees on the Crab blossomed as freely as the others, but the fruits nearly all fell. In the nursery only Lord Grosvenor, Golden Spire, Grenadier, and its cousin Gold Medal and Keswick Codlin carry fruit, while nearly 200 varieties are bearing upon the Paradise stock. In special instances this is most marked; 500 Worcester Pearmain on Crab stocks are fruitless, but 500 on the Paradise, only 9 yards away, are full of fruit, though fully 75 per cent. were cut back to form pyramids; 5000 Lord Suffields on the Crab have no fruit, while 500 on the Paradise are heavily cropped; and in the maidens the following are pictures of fertility—though here again 80 per cent. were cut back (and the best fruiting wood removed)—Peter the Great, Stirling Castle, Bismarck, Baumann's Reinette, Devonshire Quarrenden, Duchess of Oldenburg, Grenadier, King of the Pippins, Manks Codlin, Seton House, Pomona, Cox's Orange, Duchess of Gloucester, Gascoyne's Scarlet, and Sturmer Pippin. Those and many others have set a fine crop. Where orchards are not required for grazing purposes evidently trees on the Paradise on the plantation style will be the trees of the future, and will soon repay for initial outlay.

The Apple crop has been most disappointing and the fruit has dropped prematurely, so that the hoped for crop will not be realised in this part of Kent. As usual there are happy exceptions, but on the other hand the trees are very vigorous, and there is much less damage by the caterpillar "genus" than for some years. It is hoped the trees will fully recover this season. Irish Peach were making 14s., and Duchess of Oldenburg Apples 12s. a bushel this week. Is it possible that Paradise trees have resisted the great frost of March 3rd better than the others? — GEORGE BUNYARD, *Maidstone*.

CANKER.

CANKER of Apple and other trees and plants arises from weakness, consequently inability to elaborate the matter that is essential to healthful development and continued fruitfulness. Whether the tree's energy be broken down by an unnatural rapidity of growth in its early stages, by a disproportionate growth of branches over the roots, or by the disorganisation consequent upon the roots being in an ungenial soil, they render the tree incapable of extracting nourishment to develop sufficient foliage, it being a characteristic of many a cankered tree that it has a deficiency of leaves. Excessive luxuriance also induces canker, the supply of sap is disproportioned to the elaborating functions of the leaves.

Ill-elaborated sap has its outcome in eruptions, culminating in shrinkage or decay of the affected part.

Canker, when it attacks Apple or Pear trees, marks its advent by the enlargement of the bark, whether it be of a branch or of the stem. There is invariably a swelling more pronounced in the Apple than the Pear, yet always present in those trees, and in neither case accompanied by a material discharge. Beyond the mere unnatural enlargement there is no trace or marks of disease, but the swelling increases, influenced by the favourable or unfavourable conditions under which the tree is vegetating; the alburnum dies, the bark cracks, rises in discoloured scales, and decay rapidly ensues. Small branches are soon encircled by the decay, extending through the whole alburnum and bark; moderate sized and large branches, even the stem itself, fall a prey to the evil, until ultimately the circulation of the sap is prevented, and the wood above the diseased part perishes.

In the Apple and Pear the true sap contains a considerable quantity of free acid, and in this there is, when the energy becomes impaired, a marked tendency to secrete the calcareous saline compounds, and though there is no discharge, as in the case of the Oak and Elm, there is a great destruction of wood. In the Oak and Elm, the sap of which is characterised by abounding in astringent or mucilaginous constituents, the discharge is copious, particularly in the Elm. I have seen this morbid product flow from the stem of a tree so copiously as to saturate the ground to a considerable extent around, attracting a number of wasps. On the edges of the canker in Apple trees Sir H. Davy found carbonate of lime, the bark over which the matter flows in the Elm attains the appearance of chalk, effervescing with acids. A blackish varnish-like deposit is left on the bark of the Elm, not infrequently hanging like stalactites, the matter being alkaline, and effervescent with acids. The white matter formed round the edges of the canker is composed, according to Vauquelin, of carbonate of potass, 34.2 per cent.; carbonate of lime, 5; carbonate of magnesia, 0.3; and vegetable matter, 60.5.

That the discharge is highly destructive of the wood is apparent, yet the destruction is not so great as the observer may conclude, as the amount of saline constituents in the healthy sap are largely and unnaturally increased in the diseased state. When the sap becomes vitiated—unnaturally saline—the tree becomes debilitated, and loses its power of selecting by its roots congenial nourishment. Canker, then, arises from a tendency to secrete calcareous saline compounds, due to acids prevailing over the alkalies. The remedy is easy—supply more alkali and the acid will be neutralised. Excessive moisture in soils induces succulent growth, weakness, and early decay. Draining is the prime agent by which the superabundant moisture is removed, the food of plants being destroyed by its presence, and as we remove the cause so will the roots recover their sensitiveness by the increase of temperature that follows the draining. Then it is a property of iron to sink, so by taking away the superabundant water we draw off a considerable portion of the iron. Still there are acids which have been formed, and we can only get rid of them by a neutralising agent. In this case quick (hydrate of) lime will afford what is required as a corrective. That, however, is not enough. Soils that have formed a pan must have it broken up by trenching and due exposure to the atmosphere, so as to affect their amelioration. Six tons of quicklime per acre will mostly be sufficient to correct the acidity of soils. Want of moisture in soils may be palliated by a dressing of chalk, the acids being neutralised by it in light soil, as they are by the quicklime in heavy and wet land, and in proportion as the neutralisation goes on so is the ammonia liberated from the iron. A dressing of clay marl would be even more advantageous, as its lime has the additional benefit of alumina, which with iron has the property of attracting ammonia. If the soil rest on iron gravel this must be removed, and an artificial drainage of chalk substituted, or in case of a subsoil not necessarily gravelly, but in which iron largely abounds, it may be necessary to put in concrete to prevent the roots passing into the unfavourable iron subsoil. The débris of an old building—the lime or old mortar rubbish freed of old laths—6 to 9 inches thick answer well on retentive soils, and a similar thickness of chalk where the soil is light.

Soil, however, is not everything. If the roots are deep they will send up colder and cruder food; if shallow they may afford a meagre and uncertain supply. When a few strong roots run riot in a loose rich soil the growths are gorged with sap and liable to injury by frost, resulting in canker. This can be rectified by lifting and replanting in firmer soil. The over-vigorous tree will have much wood but proportionately few leaves before lifting, afterwards not nearly so much wood but many more leaves, which means improved digestion, more perfectly elaborated sap, higher assimilation, and a greater store of ripened wood. This makes the difference between the unhealthy and healthy, between the unfruitful and fruitful, tree.

Canker may also be induced by severe or injudicious pruning. The removal of large branches late in spring is prejudicial. When recourse is had to severe pruning, especially of old trees, it should always be practised when they are in full leaf, and after the sun has passed the meridian, so that the growths retained may have the benefit of the remaining part of the year's light and warmth to mature the wood and store up food for the coming season. Late pruning is also bad, especially for luxuriant trees, as it tends to late growths, which are liable to be damaged in severe winters. Where growth is so superabundant as to necessitate severe pruning two palliatives only will avail—viz., root-pruning, or allowing the branches more space for extension. A tender variety is more subject to canker than a hardy one. That points to the necessity of selection—preserving and propagating from the most suitable. There is the question of bruises and the punctures of insects causing canker. I have never known a bruise result in canker, and though the bark may be punctured or the wood drilled by insects, no canker, so far as I have observed, could be traced thereto.—G. ABBEY.

PARISIAN HORTICULTURE.

THE rush and bustle of the show season during the past two months have interrupted my Parisian notes, and several little chapters have yet to be written. Before, however, the present contribution reaches the hands of Journal readers I expect to be in 'reland amongst the gardens and gardeners of our sister isle. Numerous kindly invitations, a full programme, and an earnest desire to see everything worthy of record, will occupy my time there, consequently I have taken advantage of this opportunity to refer to one of the most pleasant of my Parisian excursions.

Starting from the Hôtel de Londres, near the St. Lazare station, Baron Adolphe de Rothschild's residence in the Rue Monceau was first visited to obtain the necessary permission, most readily accorded, to visit the demesne at Boulogne sur Seine, the special object of the day's journey. A short time was then spent in the charming Parc Monceau, a perfect little model of what a town park should be, and to which I hope to refer again at the first opportunity. Thence proceeding by road to the Champs Elysée, a drive by way of the Arc de Triomphe and the Place de l'Etoile was commenced of a most enjoyable character on a brilliant sunny day such as have been too rare this season.

THE BOIS DE BOULOGNE.

The praises of this delightful resort have been frequently sung in the pages of this Journal, and no visitor familiar with our too formal London drives and parks could fail to be impressed with the scenery in the Bois. We have nothing like it in London or even in England as a public park. With regard to extent alone, I believe Richmond Park most nearly approaches it, with somewhat the advantage by a few acres, the "Bois" covering about 2000 acres. But there is no further similarity between the two parks, except that they are both well wooded, though again Richmond has the advantage in the size of its "specimen" trees, and in the "Bois" there are comparatively few of an unusual character. As a portion of an old forest it has included many fine trees, and the remains of some may still be found that in various troublous times have been destroyed, either wantonly, by accident, or for use in several ways. The "original" forest was largely composed of *Quercus sessiliflora*, the *Chêne rouvre* of the older French writers, and there are numbers of this Oak in the present "Bois," but many other trees have been largely planted, with the result that the diversity of aspect has been advantageously increased. The denseness of the tree and shrub growth has been a great help in improving the picturesque appearance of the "Bois," for judicious cutting and clearing have in some instances effected much more than could have been accomplished by planting or artificial design. It is probable, too, that still further improvement would result from an extension of the clearing process at suitable points. Observers have remarked a want of breadth as being the chief defect of the place, and this is true; but it must be remembered that the actual width of the park, if it may be so termed, is small compared with its length, and it would be difficult to secure an open space of sufficient extent to justify the wholesale sacrifice of the present occupants. In Hyde Park and Richmond Park, already mentioned, we have these grand open breezy spaces to perfection, and the breadth of the parks themselves admits of this without detracting from their general beauty.

The drives through the Bois de Boulogne are the special features, because, like the avenues and boulevards of Paris, they are spacious, tree-shaded, and well watered and kept. Extending

the whole length of the "Bois" from the Place de l'Etoile the vistas are most varied and pleasing, charming peeps of dense shaded woodland scenery, the picturesque lakes, not disfigured by unsightly buildings or bare banks, are charming in the extreme. Rustic bridges, waterfalls, and other attractions have been provided in most cases with considerable taste, and it is not difficult to understand why the Parisians throng the walks, drives, and shady retreats on Sundays and holidays.

A SUBURBAN CHÂTEAU.

Passing from the "Bois" the little town of Boulogne sur Seine is entered, and driving in the direction of Sèvres, Baron Adolphe de Rothschild's residence is quickly reached, and an inspection commenced of one of the most English-like gardens I had the good fortune to visit. The garden itself is in two portions, being divided by a main road exactly like Baron Schröder's garden at Egham, the ornamental part with the resi-

dition. The one in question, however, has been formed in a very short time, and never have I seen such a dense, velvety, firm and beautiful lawn produced from seed in about two months. The seed was sown on March 20th, and my visit was made in the third week in May, and no one could have desired anything better than the condition of the lawn at that time. Much careful preparation had been given to the soil previous to sowing the seed; the natural soil, which was of an unsuitable character, had been removed, and a good compost took its place. When the seed germinated it was looked after closely, and as the growth advanced water was supplied liberally, when the condition of the soil rendered it necessary, and this, with warm bright weather early in the season, helped it greatly. Frequent cutting had thickened the grass, and in all respects it was perfectly satisfactory, and considerably better than could have been anticipated in so short a time.

Surrounding the lawns are dense varied shrubberies, large



FIG. 17.—BARON ROTHSCHILD'S GARDEN AT BOULOGNE-SUR-SEINE.

dence being on one side, and the "cultural" department, the glass houses, &c., on the other. Taking the former first, and entering the principal gate from the road, a glimpse is obtained of the tasteful bijou château, surrounded by rustic colonnades and embowered in climbing plants, Roses with other fragrant and brightly flowered plants in profusion. Beyond this the garden slopes slightly towards the Seine, and a beautiful background is formed by the wooded heights of St. Cloud on the opposite side. This is the point of view represented in the engraving (fig. 17) prepared from a photograph taken there a short time since, and kindly forwarded for reproduction with these notes.

To detail all the attractions of the garden would far exceed my present purposes, but the special features cannot be passed unnoticed. Prominent amongst these is the lawn, and particularly so because good lawns, as we understand them in England, are too seldom seen in France. The continental summer is usually very trying for grass, and it is only by the closest attention to watering that lawns can be preserved in even a fairly green con-

dition. The one in question, however, has been formed in a very short time, and never have I seen such a dense, velvety, firm and beautiful lawn produced from seed in about two months. The seed was sown on March 20th, and my visit was made in the third week in May, and no one could have desired anything better than the condition of the lawn at that time. Much careful preparation had been given to the soil previous to sowing the seed; the natural soil, which was of an unsuitable character, had been removed, and a good compost took its place. When the seed germinated it was looked after closely, and as the growth advanced water was supplied liberally, when the condition of the soil rendered it necessary, and this, with warm bright weather early in the season, helped it greatly. Frequent cutting had thickened the grass, and in all respects it was perfectly satisfactory, and considerably better than could have been anticipated in so short a time.

Surrounding the lawns are dense varied shrubberies, large beds of Roses and Rhododendrons, the latter forming a grand bank at the river end of the garden. Fine trees are also scattered about on the lawn and near the road, Liriodendrons, Planes, Birches, Sequoia gigantea, and Tilia argentea being noticeable. The whole design of the garden indicates the most thoughtful taste; the contrast or harmony of trees, shrubs, and flowering plants has been made a careful study by Baron Rothschild, and the Baroness has also aided materially in improving the artistic effect, the experience she has gained in the extensive work at her Geneva residence having been turned to valuable service in concentrating as many garden attractions as possible in the delightful little Boulogne demesne.

Concerning the ranges of glass houses in the other department of the garden where Orchids with other plants are so well grown, I hope to say something on another occasion, because it has a bearing upon a subject of some importance, the "culture of Orchids on the Continent." This could not be adequately treated in the brief notes that would have to

suffice this week, therefore it shall be resumed when an hour's leisure affords me the opportunity of dealing with the matter.—
LEWIS CASTLE.

ROYAL HORTICULTURAL SOCIETY.

THE Floral Committee met at the Society's Gardens, Chiswick, on July 22nd. Present: W. Marshall, Esq., in the chair, and Messrs. Hibberd, Lowe, Drury, Walker, Herbst, Nicholson, Baines, Leach, Dean, Goldring, Paul, and Holmes. The Committee inspected the collections of Carnations, Picotees, Stocks, and Pansies growing in the Gardens, when the following awards were made. *** Equivalent to first-class certificate; ** to award of merit:—

Carnation	*** Juliette (R.H.S.), bright rosy purple self.
"	" Mrs. Frank Watts (Ware), white self.
Picotee	" Romco (Paul & Son).
"	" Augusta "
"	" Pica "
Carnation	" Juno " rose self.
"	" Snowdrift (Fisher, Son, & Sibray), white self.
"	" Horace (Dan), scarlet self.
"	" Maggie Laurie (Dicksons & Co.), delicate blush self.
"	" Caledonia " bright purple.
"	" The Moor (Dean), dark crimson.
"	" Rowena " bright scarlet.
Picotee	" B. J. Bryant (R.H.S.).
"	" Favourite (Turner).
Carnation	" Clown (Dodwell), yellow ground.
"	" Oxonian " salmon self.
"	** Beatrice (Fisher, Son, & Sibray), buff self.
"	" Fair Maid (Dean) blush.
Pansy	*** The Bride (Dobbie) creamy white, edged blue.
"	" Duchess of Fife " orange, edged bronze.
"	" Neptune " dark purple, top petals pale.
"	** Duchess of Sutherland (Dobbie) pale lavender.
"	" Marchioness of Tweeddale " pure white.
Stocks	*** Large Ten Week (Putz) brilliant rose.
"	" " " purple.
"	" " " white.
"	" " " sulphur yellow.
"	" Dwarf Ten Week " lilac.

FRUIT AND VEGETABLE COMMITTEE.

Present: T. F. Rivers, Esq., in the chair, and Messrs. Cheal, Crowley, P, Veitch, Balderson, Warren, Wythes, and Hudson. The Committee inspected the collections of Peas growing in the Gardens, and made the following awards of merit:—The Daisy (James Carter & Co.) a dwarf wrinkled Marrow; Boston Hero (G. Bunyard & Co.) a tall white wrinkled Marrow; Ambassador (H. Eckford) a tall green wrinkled Marrow.

The Floral Committee, on July 31st, again inspected the collections of Carnations and Picotees, also the Pelargoniums, growing in the gardens, and made the following awards:—

Carnation	*** Mrs. Reynolds Hole (Veitch), terra cotta.
Picotee	" Grandiflora (Veitch), deep rose.
"	" Alice Ayres (Veitch-Ware), white, slightly streaked.
Carnation	" Gloire de Nancy (Veitch), white, large.
"	" Germania (Veitch-Benary), yellow.
"	" Raby Castle (Turner-Veitch), rose-pink, fine constitution.
Picotee	" Admiration (Veitch), dark purple edge.
Carnation	" Guiding Star (Ware), scarlet self.
"	" Will Threlfall (Paul), bright yellow.
"	" Edith (Fisher, Son, & Sibray), pale pink, spotted scarlet.
"	" Canary " pale yellow.
"	" Comtesse de Paris (Paul), pale blush.
"	" Penelope (Hooper), white self.
"	" Merlin (Lakin), deep crimson.
"	" Boadicea (Douglas), purple flaked.
"	" Caractacus " crimson bizarre.
"	" Feuerball (Benary), deep scarlet self.
"	" Mirakel von Zirbst (Benary), very dark crimson.
"	" Albrecht Duesser " deep rose, crimson flake.
"	" Orestes (R.H.S.), pale rose.
"	" Countess of Ellesmere (R.H.S.), pale flesh, spotted with crimson.
Picotee	" Agnes Chambers (Turner), yellow ground, lilac edge.
"	" Colonial Beauty " terra cotta, streaked.
"	" Dorothy (Turner), terra cotta.
Carnation	" Scarlet Premier (Storrie), scarlet self.
"	" Rose Celestial (Turner), rose self.
Picotee	" Atalanta (Dodwell), yellow ground.
"	" Diana (Dodwell), white self.
"	" Ariel " yellow.
"	" Andromeda (Dodwell), terra cotta flaked.
Picotee	** Grosken (Veitch), purple edge.
"	" Alfred Grey (Dodwell), yellow ground.
Carnation	" Hypatia (Paul), white self.

Double-flowered Ivy-leaved Pelargoniums—

"	*** De Quatrefages (Lemoine), violet-magenta.
"	" Souvenir de Charles Turner, flowers of a deep pink shade.
"	" Galilee, No. 1, soft lilac.
"	" " No. 2, soft rosy pink.
"	" Madame Thibaut, deep pink.
"	" Le Printemps, rosy pink.
"	" Comtesse Horace de Choiseul, satiny rose.
"	" Gloire d'Orleans, bright pink.

Single-flowered, Ivy-leaved—

"	*** Gem, blush white.
"	" Mrs. H. Cannell, deep mauve purple.
Zonals	*** Charles Mason (Pearson), fine scarlet, of good habit.
"	" Mons. Poirer (Lemoine), flowers of a beautiful purplish shade, of good habit of growth.

Stock, Large-flowering Ten Week—

"	** Aurora (Putz).
Fuchsia	** Dunrobin Bedder (Melville), seedling from F. Riccartoni, a dwarf, free-flowering, bedding variety.
Mimulus	** Moschatus compactus (Putz), of dwarf, even growth, free flowering, and useful for edging purposes.

NOTEWORTHY PLANTS.

THE "Botanical Magazine" for July contains coloured illustrations of several good plants that are worth the attention of cultivators. The plates, strangely enough, have been again bound wrongly, a mistake that has occurred rather frequently of late.

BIGNONIA RUGOSA.

A climbing plant with large elliptical leaves and pale yellow flowers. Sir Joseph Hooker says respecting it:—"In the absence of fruit, *Bignonia rugosa* was described as a doubtful species of the genus, and for its generic confirmation the Royal Gardens are indebted to their excellent correspondent, Dr. Ernst of Caracas, who transmitted seeds to Kew in 1872, together with the description of the fruit which is given above. Its nearest ally is probably a plant, a native of the Antilles, figured as *Macrodiscus rigescens* by Bureau in his beautiful Atlas of the flowers and fruit of the new genera into which he proposed to divide *Bignonia*, and of which the letterpress has most unfortunately never been published. As in *B. rugosa* the calyx is truncate, the corolla tubular with subequal lobes, the stamens and disc are the same, as are the fruit and seeds in all essentials. *Macrodiscus* is probably a well-founded genus. *B. rugosa* was discovered by the collector Wagener in the province of Choco, United States of Columbia, at an elevation of 4000 feet, and is described as a climber 10 feet high. In the description by Schlechtendal, and in native specimens from Dr. Ernst, there are stipular leaflets at the base of the petiole.

"The Kew plant of *B. rugosa* was raised from seeds sent, as stated above, by Dr. Ernst in 1872, and which flowered in the Palm house in October, 1889."

LUEDDEMANNIA PESCATOREI.

A handsome Orchid with long racemes of flowers, the sepals streaked, spotted, and suffused with red, the petals and lip yellow. It will be seen that a slightly different orthography is adopted for the generic name from that usual in gardening periodicals—*Lueddemannia*. An account of the botanical difference between this, *Peristeria*, *Cynoches*, *Acineta*, *Lacena*, and others is given, and the description concludes with the following note—"L. *Pescatorei* is a native of the mountains of Ocana, a province of New Grenada, at the mouth of the Magdalena River, where it was found at elevations of 6000 to 9000 feet by Schlim in 1848, who sent it to Linden, and it has been subsequently collected in the same country by Roezl. Specimens with the spike upwards of 3 feet long, and bearing upwards of ninety flowers, are known. The specimen here figured was sent for figuring by Mr. Moore of the Glasnevin Botanical Gardens in July, 1889, the spike being 34 inches long. The flower had a strong scent, rather like decaying Oranges."

ASARUM CAUDIGERUM.

A peculiar species from China with small spotted flowers, the three divisions of the flowers prolonged into whitish tails, and exactly like one of the smaller *Masdevallias*. In an illustration, if it were not for the leaves the plant might easily be mistaken for a *Masdevallia*. This is a curiosity, and as such would be worth a place in a collection, but it would be of little horticultural value.

MASDEVALLIA CARDERI.

One of the small flowered species, with pretty bell-like drooping flowers, white, with a red ring near the base, which is yellow, the sepaline tails being marked with red and yellow.

"Of all the genera of Orchideæ, none is so remarkable as *Masde-*

vallia for diversity in inflorescence, sepals, petals, and lip. Twenty species have been figured in the "Botanical Magazine," and not one of these resembles *M. Carderi* in the symmetrical pendulous campanulate flowers, which show scarcely any tendency to obliquity in the position of the ovary relatively to the scape. Nor are the colours common to the genus, the predominance of white in this being very exceptional. Dr. Reichenbach refers it to the group *Saccolabiata*, in which the terminal lobe of the lip is conspicuously saccate, and to the near neighbourhood of his *M. Houtteana* (Illust. Hort. t. 2106), in which the sheaths on the scape are lanceolate and loose, the perianth much shallower and more deeply divided, and the midlobe of the lip keeled within in the middle. Mr. Rolfe has pointed out to me a nearer ally in *M. Troglodytes*, E. Morren, in which the midlobe is, as in *M. Carderi*, quite even within, and the perianth of which more resembles that of the latter, though more deeply divided and very differently coloured. It further differs in the flowers being pedicelled, the narrow hypochile, and the acuminate column."

HAKEA LAURINA.

A member of the now forsaken *Protea* family, and like many of its relatives, it is, when in flower, very handsome. The leaves are long and narrow, the flowers in scarlet balls, from which the long yellow styles project to a considerable distance.

"Unfortunately it is not one that will stand in the open air in any but the warmest parts of the British Islands, and being a native of a very dry part of Australia, even the warmer counties would probably prove too damp for it. This, however, remains to be seen, for hitherto it has been treated in England only as a greenhouse plant. In the Mediterranean regions it does well; it has flowered profusely in Italy and Sicily, first, I believe, in Palermo in 1880, and later with the Baron Ricasoli, at his residence of Casa Bianca, near Argentaria, in Sardinia. Mr. Watson informs me that under the name of the Sea Urchin it is the glory of the gardens of the Riviera, where in Mr. Hanbury's garden, Mortalo, near Mentone, he saw a plant of it, forming a shrub 10 feet high, covered with balls of flowers $2\frac{1}{2}$ inches in diameter. The specimen here figured was flowered by M. Braves at Nice, by whom a flowering branch was sent to the Royal Gardens in 1889. It is a native of the south-west coast of Australia, where it ranges on hills from Cape Arid to King George's Sound."



THE CULTURE OF THE CHRYSANTHEMUM.

At a recent meeting of the Dalston Amateur Chrysanthemum Society the President (Mr. W. Holmes) delivered an instructive lecture upon "The Culture of Chrysanthemums," of which the following is the substance.

After some introductory remarks by Mr. Arthur Hill, the President proceeded to give a rough outline of the necessary operations and "time table" for the cultivation of Chrysanthemum blooms for exhibition purposes, specially applicable to Dalston and similar districts, and based his remarks upon the following carefully prepared directions:— November (at the shows), first consider and decide positively which of the sections it is preferred to grow; (at home) second, estimate exactly the number of plants you can accommodate when the time arrives for housing; December, secure a sufficient number of good clean cuttings, make them carefully, pot into a suitable light soil, and place in a cool position, when struck pot into thumbs or $2\frac{1}{2}$ -inch pots; January, secure cuttings of those varieties that could not be obtained in December, and treat in a similar manner; February, shift all plants that may be ready into small 60's or $3\frac{1}{2}$ -inch pots, keep close for about a week, afterwards give a moderate amount of air during daytime, specially guarding against frost, and keep the plants to a single stem; March, shift the remainder of the plants which were not ready in February, and treat in a similar manner; April, repot all the strongest plants into 32's or 6-inch pots, keep close at night for a week or ten days, and then give all the air possible; May, repot the remainder of the collection, and treat in a similar manner; June, shift the strongest plants into their flowering pots—viz., 16's or $8\frac{1}{2}$ -inch, stake and tie securely; July, shift remainder of plants and treat in a similar manner, and arrange plants in summer quarters; August, secure suitable buds where possible, and having done so commence stimulants in very moderate proportions; September, secure buds of those varieties that could not be taken during previous month; October, house plants in greenhouse, and increase use of stimulant as buds develop into flowers; November, keep a strict watch over flowers, remove malformed or damping petals, look out for earwigs after dark,

and one or two days before the show cut and dress the blooms, stage on regular boards, and win.

Speaking to the above "directions," Mr. Holmes, in a chatty and conversational manner, said they were assembled for the purpose of disseminating such knowledge as they happened to possess of the cultivation of their pet flower, the Chrysanthemum. It was somewhat unusual that meetings in the interest of that flower should be held at a time of the year when the Queen of Summer, their favourite flower, the Rose, had so nearly reached the zenith of its beauty and perfection. The Queen of Autumn, however, was their pet flower, and out of interest for it, no less than for their earnest regard for the Society, they did not hesitate to summon a meeting at the present period of the year to discuss the best methods of producing it. If any justification were needed for holding that meeting, it would not be difficult to find plenty. In the first place, it was pretty well known that the present year was the centenary of the introduction of the flower into England. As they were probably aware, it was proposed in November next to hold larger and more extraordinary exhibitions than usual to celebrate the event, not only in London, but in most of the larger towns and suburbs around the metropolis. That being the case, they were surely justified in holding an extraordinary meeting such as the present, to enable them to pay closer attention to the cultivation of the plant, and to produce such flowers as had not hitherto been seen. If further reasons were required it was only necessary to refer to the admirable statement which had been submitted by their Chairman and the Treasurer as to the progress which the Society had made, proving how strong was the hold which it had taken upon the florists in that particular district. He was glad to say that the enthusiasm displayed with regard to that flower was not confined to that district alone, for as Secretary of the National Chrysanthemum Society he had during the past four or five months received no less than twenty applications from bodies of gentlemen in various parts of the country, who had bound themselves together, and were organising such societies as theirs.

Having mentioned one or two other features indicative of the interest and enthusiasm which was evinced in the cultivation of the plant all over the world, the speaker went on to deal *seriatim* with the "directions" above referred to, and in the first place remarked that there were now some nine or ten sections set out in the catalogues, irrespective of the many forms of Japanese. Having explained the leading characteristics of these, the President said he had no hesitation in saying that the easiest to produce good exhibition flowers was the Japanese section. They were much easier to stage, they required less dressing, and were more largely grown than any other section. There was no more fruitful source of failure in the culture of the Chrysanthemum, or indeed of any other plant, than the attempt to grow more than they had accommodation for. He had seen many collections absolutely spoiled because of overcrowding, and owing to the fact that an attempt was made to do more than the capacity of the house or ground could provide for. He strongly recommended everyone to take double the number of cuttings required in consequence of the many risks to which the plants were exposed. The extra trouble was very small compared with the distinct advantage of having a large stock to select from. They must be careful that the cutting was "clean cut," and that it was made at the bottom of one of the joints. The reason for that was that in nineteen cases out of twenty roots would come from immediately below the axil of the leaf. If they did not make their cutting immediately below that axil the result was that the portion which was left on decayed until it reached the axil and then struck off. In the process of decay, however, the probability was that the whole cutting would be lost because it had not been made in the right place or cleanly.

The soil must contain plenty of grit, and be thoroughly well drained; and the young plants should be placed in thumbs, or 2-inch pots. It was a fact which was proved by experience that cuttings placed on the edge of the pot would strike in about two-thirds of the time which would be occupied if they were placed in the centre; and this was owing to the fact that the drainage on the edge of the pot was far more complete than was the case when the cuttings were surrounded by soil. As to position they should get an ordinary handlight, and place it in the greenhouse, taking care that there was not too much moisture. Very little water was required after the cuttings were put in. One good sound watering should be given to settle the plants, and they should then be left for a week or ten days. Everything must depend upon the surrounding conditions as to what quantity of water should be administered, but generally speaking very little was required for the first fortnight. They must not dig a deeper hole than the cuttings required, and care must be taken that it touched the base of the hole, as many hundreds shrivelled up in consequence of their not doing so. Then it was not advisable to grow year after year from the same plants, but stock should be interchanged with neighbouring florists. Generally speaking cuttings should be taken in December, but in the case of many varieties it was necessary to postpone doing so until January. Cuttings should always be shifted from one pot to another as soon as the roots reached the side of the pot. The best soil to use was that containing three-fifths of good rich loam, one-fifth of grit and oyster-shells pounded, one-fifth of the ordinary rotten manure, and a quart of good clean soot to every bushel of soil, for the purpose of preventing aphids and insects generally. The cuttings should be tightly potted.

Having explained the best method of connecting the young plants with the bamboo canes, which were the best things to use for the purpose, the President went on to say that the first buds that were set were practically useless for exhibition purposes and should be discarded.

They must then decide how many shoots they would carry up, but in arriving at their decision upon that point, they must be guided by the particular variety which they were desirous of cultivating. If the plants were strong they might have four or five blooms, but on an average he carried up four and permitted them to go on until they had made about a foot of growth. They would then be able to see which of the four were the stronger, and the weaker could be taken out. In July the pots should be arranged in long rows, on either side of a long path was as good a position as they could have, or in parallel rows in some place in the garden. Next month the buds would begin to set, but if they did so in the first fortnight in August they should be pinched off.

Stimulants must not be used until the plants had begun to exhaust the soil in which they were potted. The only reason for giving them stimulants was because they were then going through a trial time, as it were, or because the food at the roots was exhausted, and they required it. He believed a mixture of cow and sheep manure was as good as they could find anywhere. They were accustomed to hear of all sorts of chemical manures, but they were rather dangerous to use, and unless they were thoroughly acquainted with their properties they would find that more harm than good was done by employing them. During this month also any amount of syringing would do a great deal of good.

With regard to September, the lecturer pointed out that there were two kinds of buds, the "crown" and the "terminal." The former generally gave fine large flowers, which took a long time to develop, whilst the other produced flowers of a brighter and better colour, and with not so large petals. Certainly the "terminal" buds made more perfect blooms, though they were not quite so large, but it was an extraordinary fact that, though they took the "crown" buds the second week in August and the "terminal" in September, the two flowers would be at perfection at one and the same time. They must be very careful to give the plants all the room they could afford, and to tie the branches so that the various blooms were set out independently. The least bruise in the bud developed into a malformed flower, and the greatest possible care should be exercised in preventing the slightest bruise of any kind. If they only drew the back of a quill over a bud they would probably find a black mark across the flower when it subsequently developed.

Watering, when the plants were under glass, should be very carefully done, and in order to keep the mildew in check a little flowers of sulphur should be used. He was of opinion that a little sulphate of ammonia did much towards helping the flowers to develop and to brighten the colours in some of those varieties in which they wanted to heighten the colour. He considered that excessive dressing, if not illegal, was at any rate an undesirable practice. He did not see how it was to be stopped, nor was it desirable to do so whilst it was conducted on something like proper principles. It commences, as far as he could judge, from the moment that the flower began to develop, and having noticed a malformed petal the grower removes it. When, however, it reached such a point (as he had known) as a man carving out the bad centre and taking that of another bloom and pinning it in its place, he must say that he was distinctly opposed to it.

Mr. T. W. Howard, in moving a very hearty vote of thanks to the President for the lecture he had delivered, proved himself to be thoroughly conversant with the subject of the Chrysanthemum, and paid a high tribute to the services rendered by Mr. Holmes to the floral world. This was seconded by Mr. G. C. Young, and carried amid great enthusiasm.

STRAWBERRIES.

ALTHOUGH we cultivate about seventy-five varieties, we do so with a view to reduce them to twenty-five best in the future—plus the Alpines and Hautbois family; and in order to do this we have taken notes, and our Strawberry foreman has done the same. The results—which were unanimous—may interest your readers.

Best ten for quality and flavour:—Dr. Hogg, British Queen, John Powell, La Grosse Sucrée, Vicomtesse de Thury, Keens' Seedling, President, Trollope's Victoria, Lucas, and Countess. Many palates prefer a brisk acid flavour; therefore Sir Charles Napier, Aromatic, Kimberley, and Eleanor would come in.

Best twelve for crop:—Noble, Vicomtesse H. de Thury, President, Sir C. Napier, Sir J. Paxton, Aromatic, Helena Gloede, John Powell, King of the Earlies, Jubilee, Newton Seedling, Trollope's Victoria.

Largest half-dozen:—James Veitch, Noble, Helena Gloede, Sharpe's No. 1, Sir Joseph Paxton, and Auguste Nicaise.

These results are arrived at after a close examination through this season, and from one, two, and three-year-old beds. When a few fresh kinds and new ones under trial have had a fair chance some of the above may be superseded; but in order to make up the twenty-five varieties we must add the following, which are just outside the boundaries above:—Filbert Pine and Waterloo.

We find such close compact growers as Countess, Lucas, Dr. Hogg, Duke of Edinburgh, Jubilee, Hammonia, Frogmore Late Pine, and one sparse-foliaged variety—La Grosse Sucrée—want planting closer together than usual—say, 24 by 12 inches—otherwise the radiation of heat from the exposed soil reduces the crop; and possibly they would be better if allowed to ramble all over the bed. They are really better in three-years beds than during the second year. We think Bicton Pine (which Mr. Barron calls White Carolina) should be planted in every garden, as it is invaluable in dry summers, as its ample foliage protects

the fruit. In our opinion a good Strawberry should possess fine foliage, long footstalks, and a hardy constitution.—GEORGE BUNYARD, AND CO., *Maidst me.*

BIRDS, INSECTS, AND FRUIT.

MR. HIAM'S VIEWS.

A VISIT to Mr. J. Hiam, naturalist and fruit grower, The Wren's Nest, Astwood Bank, Worcestershire, was described as follows in a recent issue of the *Evesham Journal*. Mr. Hiam's observations are suggestive and useful:—

"Mr. Hiam, who is a member of the Evesham Experimental Insects Committee, stated that the psylla was very prevalent amongst the Apple trees. He also remarked that he thought that it would be a good thing if the Experimental Committee met again before the autumn, because they had other pests to deal with besides the caterpillar, and notable amongst these were the psylla, the Apple weevil, the aphid, and others, which would require the serious consideration of the Committee. Mr. Hiam is a great believer, in the case of small and young trees which are easily accessible, of using a coating of thick limewash on the trees, so as to encase the eggs of the caterpillar, the psylla, the scale, and others, and he can show the visitor several instances where this dressing has achieved the most excellent results. He used two brushes, and painted the stems and the branches of the trees. It will be seen that this process is impracticable in the case of large plantations and old trees. Mr. Hiam, however, thinks perhaps that it might be successfully carried out by means of a hop-washing machine or a strawsonizer, supposing that the nozzle was large enough and the liquid thick enough.

"Before inspecting the orchard Mr. Hiam alluded to the good small birds did, and casually observed that at the evening meeting held some time ago at Evesham, when he gave a lecture on birds and insects, it was said that the common tom-tit did as much damage as any other bird which the gardeners were troubled with. He dissented from that view, his opinion being that they were most useful insect destroyers, and not fruit eaters. The bullfinch, on the contrary, is exceptionally fond of the bud, and not long since he shot a tom-tit and two bullfinches for the purpose of confirming or refuting his opinion. The result has been just as he foretold. The inside of the tit contained nothing but blight, while that of the bullfinch, one of which was feeding on the Plums and the other on the Gooseberries, contained the inside of the bud. Mr. Hiam is strongly of opinion that tom-tits should be preserved in the gardens. He also advocates, not the destruction, but the capture of the bullfinch. This he considers the more humane treatment, and it is also more remunerative, as bullfinches are still looked upon as song birds, and can be turned into money. They are also very easily caught at a certain time of the year, and he caught forty-two last winter.

"After some little time had been spent in examining these specimens, an inspection of the orchard was made. Mr. Hiam first drew attention to an Apple tree which was so badly blighted last year that when it was photographed there was not a leaf to be seen upon it. He placed a grease band around it, but as this was applied late it did not have quite as much effect as it should have had, and caterpillars appeared. It should be mentioned that he was unable to obtain good grease as early as he desired, and could not apply it until about the middle of November, which was at the least a month late. By that time several of the female moths had found their way up the tree, but nevertheless the grease bands proved death traps to some thousands. In this particular tree, as soon as the caterpillar made its appearance, Mr. Hiam syringed with a solution of Paris green, and the result has been most satisfactory. The foliage looks exceedingly well, and although there is no fruit, which can hardly be wondered at considering the condition of the tree last year, it looks healthy and in good form for a crop next year. By way of an experiment, Mr. Hiam left an Apple tree adjoining to take its chance, and the result is that there is no foliage at all on it. This is the same with another tree close by where no washing was resorted to. All the trees were greased at the same time. The most marked contrast in the whole of the orchard was in one large Apple tree which was greased as well as the others. Here the caterpillar also appeared, and on one side—about a third of the tree—Mr. Hiam used a wash of London purple, leaving the other two-thirds alone. On the portion which was dressed the foliage is slightly scorched, but beyond that there is no damage done and there is no sign of the caterpillar. There is also a very good show of fruit, while on the other parts of the tree there is no fruit and very little foliage. A clearer proof than this could hardly be obtained. Another tree had been dressed with Paris green, and here the foliage is practically uninjured, and the fruit is as thick as the tree can very well bear. At the end of the orchard some high Elm trees overhang the fruit trees, and Mr. Hiam says that the wind shakes the caterpillars from the Elms on to his fruit trees, and he was suffering a good deal of damage from this cause. An application of Paris green, however, soon disposed of the pest. With regard to an application of alum, Mr. Hiam said that at first he was inclined to recommend its use, as it appeared to kill the grub. As, however, the grub increased in size, it had no effect upon it, and he added that Mr. C. D. Wise was not far wrong when he said that the caterpillars liked alum. The trees on which this preparation had been used were quite devoid of foliage.

"With regard to the greasing, Mr. Hiam places the grease upon waterproof paper, and where there are any irregularities in the trunk of the tree or the bark, he fills it with a kind of cement made of lime and soot, to prevent the moths creeping under the band. On one tree he

was induced to try a solution of Hudson's dry soap, and this he thinks he must have used too strong, as the foliage was very much scorched. Nevertheless, the fruit was saved for this year at least. How the scorching of the foliage will affect next year's crop remains to be seen.

"The psylla is present in considerable quantities amongst Mr. Hiam's Apple trees, and they make their presence known by the number of Apples which have fallen off. Mr. Hiam has hit upon a method of catching this fly—that is, to get an old umbrella and grease it inside, and then to hold it near a bough, which is shaken. The flies immediately disperse in swarms, and many are captured in the grease. Mr. Hiam also showed several trees upon which there was no foliage at all last year, and upon which the leaf could not possibly look healthier. There is, of course, no fruit, but last year's blight is sufficient to account for that. Mr. Hiam is of opinion that London purple will scorch the foliage sooner than Paris green, and also that the leaf of the Keswick Codlin is more easily affected than that of other Apple trees. Several of the little homes are provided for birds in various parts of the orchard and premises, and nearly all were tenanted in the spring. In one of these—an old tea pot—no less than seven broods have been safely reared. Mr. Hiam's extensive knowledge of the habits of birds and insects made the interview most interesting and enjoyable."

HORTICULTURAL SHOWS.

HAYWARDS HEATH.

IN our brief notice of the first Show held by the above Society last year we expressed the opinion that from its central position, the enthusiasm of its promoters, and the generous facilities offered by the Railway Company, it would become something more than a local Show. These expectations have been fully realised on the occasion of its second annual Show, held on Wednesday last, the 30th ult. The entries were so numerous that five marquees were necessary to receive the exhibits, and even with this accommodation exhibitors came in with such a rush as to make the pre-arranged means of staging wholly inadequate to cope with them. Experience will no doubt remedy this another year, as it will also the slight want of method in supplying exhibitors' cards, &c. One or two other matters also want seeing to in the future—viz., keeping exhibitors up to time in the morning, so that the Judges may have time to finish their labours before the admission of the public, for it is extremely annoying for the latter to make their awards with a small crowd of exhibitors surrounding them. With regard to the arrangement of the exhibits they were very satisfactory, except that they were overcrowded in some instances, and it was a mistake to place large foliage plants, Ferns, and flowering plants on so high a stage in the centre of the large marquee. Large pots should never be made conspicuous by bringing them so near on a level with the eye if the occupants are to be seen to advantage.

Having pointed out these few shortcomings, let us briefly refer to a few of the best features of a highly satisfactory exhibition. There were five miscellaneous groups of plants staged, all very creditable. Mr. T. Gilbert of Springfield Nurseries, Hastings, was an easy first with a beautiful light arrangement, in which elegant Palms and Lilioms were appropriately associated with choice plants of dwarfer growth. W. Jupp, gardener to G. Boulton, Esq., Eastbourne, was second with a neat group, in which Orchids was a feature, but he was short of a few larger Palms to be on a level with his opponent. Mr. Hodges, gardener to — Gibbons, Esq., Lindfield, was third, and S. Horseroft, gardener to Mr. Potter, Ardingly, fourth with well arranged groups. For so young a Society this was felt to be an unequal contest. For a group of foliage plants Mr. Jupp was first, Mr. A. Seutt, gardener to Mrs. Jenkins, Burgess Hill, second, and Mr. Gilbert third. Mr. Jupp was also first for the collection of Ferns, Mr. J. Harmes, gardener to Miss Wyatt, Haywards Heath, second, and Mr. G. F. Wickham, gardener to Mr. J. Humphrey, Rymer, third. For a collection of fruit, flowers, and vegetables arranged for effect two exhibitors staged. Mr. G. Stringer, gardener to R. A. Biron, Esq., Cuckfield, had much the best fruit, and although the arrangement was of the simplest it was effective. The other exhibitor was Mr. C. Crosby, gardener to Mr. Cambridge, Lindfield. W. Marston, gardener to Mrs. Borrer, Bolney, was first of the collection of nine varieties of vegetables with a fine lot, conspicuous being Satisfaction Potatoes and Duke of Albany Peas. Mr. F. Godby, gardener to Dr. Withers, Moore Burgess Hill, was second. These classes were all open to the county. We must pass over the plant classes. They were much more numerous and of better quality than last year, the chief successful exhibitors being Messrs. J. Hodges, J. Mitchell, H. Townshend, P. March, G. F. Wickham, and J. Voss. Amongst cut flowers hardy herbaceous flowers and annuals were well shown, and made a fine display. The fruit staged was of very good quality, and the entries numerous, especially in hardy fruits. The chief prize-winners were Messrs. C. H. Brooks, G. J. Warren, H. Hunt, G. Jupp, W. Marston, S. Horseroft, H. Cornwells, and G. Austin.

There were thirty special prizes offered by various tradesmen, much to their credit, amongst whom were Messrs. Sutton & Sons, Messrs. J. Carter & Co., Messrs. Daniel Bros., Messrs. Grimsdick & Son, Messrs. J. Cheal & Sons, Mr. T. S. Ware, Messrs. Richard Smith & Co., Messrs. Wood & Sons, Mr. G. W. Piper, Messrs. Hooper & Co., and others. The result of this was that nearly a whole marquee was filled with interesting exhibits. A similar marquee was well filled by the trade themselves—or rather their exhibits—and the Roses there staged by the Messrs. Woolard & Sons, Mr. W. Knight, Messrs. Geo. Banyard & Co., and the

Messrs. J. Cheal & Sons, and made a great display. Messrs. J. Laing and Sons sent some fine cut flowers of their famous Begonias, and Messrs. J. Peed & Sons showed some cut flowers of their beautiful strain of Gloxinias, neatly arranged in moss and Maidenhair Fern.

The Society had unfortunately a miserable day for their Show, a drizzling rain falling at intervals all day. The President of this promising Society is S. Cooper, Esq., and the Secretary Mr. A. Willmot.

SOUTHAMPTON.—AUGUST 2ND.

IT is pleasurable to state that the Show to be described was superior in all departments, and the officials are to be congratulated on the success achieved. Captain Gibbs is most energetic as Chairman of the Committee, and Mr. Fudge is a most courteous and experienced Secretary.

PLANTS.—For these thirty-five classes were set apart, sufficient to bring together an excellent collection, and as the prizes were liberal the competition was good. Two very large tents were required, one being devoted entirely to the specimens, while the groups and small plants occupied the centre of another tent. The arrangements were excellent for proper inspection both by the Judges and public. There was a slight falling off in the numbers staged. Mr. Lock, who has been a constant exhibitor for some years, was missed. The principal class was for twelve stove or greenhouse specimens, half to be in bloom and the remainder foliage, for which prizes of £15, £12, and £10 were offered. Mr. Cypher, The Nurseries, Cheltenham, was easily first, showing a clean lot, the flowering plants being fresh and well bloomed, the foliage all that could be desired. *Latania borbonica* was of huge size, *Crotons Sunset* and *Thompsoni* were richly coloured, *Kentia Fosteriana* and *Cycas revoluta* were noteworthy. The best of the flowering plants were *Ixoras Pilgrimi* and *coccinea*, both profusely flowered. *Bougainvillea glabra* and *Allamanda nobilis* were also good. Mr. E. Wills, gardener to Mrs. Pearce, Bassett, Southampton, was second, a capital *Cycas revoluta* being in his group; third Mr. J. Currey, gardener to Col. Pepper, Milford Hall, Salisbury. For ten stove or greenhouse plants, competition confined to gardeners only, the same conditions applying as in the former class as to number of flowering plants, Mr. N. Blandford, gardener to Mrs. Haselfoot, West Hill, Bitterne, was an easy first. The rarely seen *Lasiandra macrantha floribunda* was well shown, with *Ixoras Duffi* and *Fraseri*, and *Allamanda Chelsoni* well flowered. Mr. W. Peel, gardener to Miss Todd, Sidford Lodge, Shirley, was second.

An open class for six specimens was also provided and produced a capital display, so keen was the competition. Mr. Cypher followed up his previous success by taking first honours with *Erica Parmenteriana* of large size, freely flowered, and good in colour. *Ixoras salicifolia* and *Regina* were also good. *Croton Queen Victoria*, rich in colour, and *Kentia australis* were the best foliage plants. Mr. Blandford was a good second, staging a magnificently flowered *Allamanda Hendersoni*, and a like specimen of *Ixora Fraseri*; Mr. J. Currey third. The best single specimen foliage plant was a healthy *Latania borbonica* from Mr. Wills, Mr. Currey being second. Mr. Blandford was first for a specimen flowering plant with *Erica æmula*, 3 feet in diameter, beautifully flowered, Mr. Mills following with *Statice profusa*, and Mr. Cypher with *Ixora coccinea*. This was a strong class. That for six stove or greenhouse Ferns brought out some good specimens, Mr. Wills leading with *Lomaria gibba platyptera*, *Nephrolepis davallioides furcans*, *Microlepia hirta cristata*, and *Adiantum cardiochlamna*. Mr. Peel was second, also staging well. For the same number of hardy Ferns there was smart competition, Messrs. Blandford and Wills being first and second respectively. *Athyrium Filix-femina grandiceps*, *Onoclea sensibilis*, and *Adiantum pedatum* were most noteworthy.

Mr. Wills was the only exhibitor of six Fuchsias, he deservedly taking first honours with specimens 7 feet high, freely flowered, and he was also first for a single specimen. Mr. H. Innes, gardener to J. Buchan, Esq., Wilton House, Southampton, was second in the latter class. For six Begonias Mr. Wills was first with not very large plants, but very healthy and carrying fine blooms. Mr. Bushby, gardener to F. Willan, Esq., Thornhill Park, Bitterne, was second, he also staging well. Messrs. Innes and Busby took the awards for *Coleus* in six distinct varieties, the plants being remarkable for high colouring rather than large size. *Cockscombs* were magnificently staged by Mr. E. Varney, gardener to T. B. C. West, Esq., Langdown Lawn, Hythe; the plants were dwarf, carrying heads fully 8 inches wide and 15 inches long. Mr. Innes was second. Mr. B. Ladhams, florist, Shirley, staged the best *Petunias*, freely flowered, dwarf plants. Double Begonias in four varieties were best staged by Mr. Innes and Mr. Busby. Mr. Blandford staged the best double and single Zonal Pelargoniums, Mr. Wills following in each class. Gloxinias were capitally shown by Messrs. Blandford and Innes, prizes going in the order named. Mr. Wills took first honours for six *Celosias*, freely flowered, and also for six table plants. Mr. Budd, gardener to F. Dalgety, Esq., Lockerby Hall, Romsey, was second in the latter class.

For a group of miscellaneous plants arranged for effect, occupying 120 square feet, there were five competitors. Mr. Wills was a somewhat easy first. From a bed of small Maidenhair Ferns rose such plants as well-coloured *Crotons*, light and graceful Palms, *Franea ramosa*, *Lobelia fulgens*, and *Celosias* evenly and lightly disposed, the whole neatly edged with *Panicum variegatum*. Mr. Currey was second with plants suitable for the purpose, but heavily arranged, lacking lightness and grace. Mr. Ladhams was third with an harmonious arrangement of hardy plants mainly, in conjunction with Maidenhair Ferns and Palms.

Orchids were not largely shown. The best collection was staged by Mr. E. Carr, gardener to W. A. Gillett, Esq., Fair Oak Lodge, Bishopstoke, comprising such plants as *Lycaste Deppei*, *Chysis aurea*, *Odontoglossum vexillarium*, *Epidendrum vitellinum majus*, and *Anguloa Clowesi*. Mr. Blandford was second. The best specimen Orchid was a *Cattleya Gaskelliana* from Mr. Cypher; second, Mr. J. Evans, gardener to Lady Ashburton, Melchet Court, Romsey. Amateurs staged most creditably in the classes set apart for them.

CUT FLOWERS.—These made a good display in the tent with the fruit. For twenty-four Roses, distinct, Mr. S. G. Rumsey, Wrotham, Kent, was placed first with a capital lot for so late in the season, the blooms being large and richly coloured, especially *Comte de Raimbaud*, *Duke of Edinburgh*, *Alfred Colomb*, *Earl of Dufferin*, *Madame Hoste*, *John S. Mill* and *Mrs. J. Laing*. Messrs. Perkins & Sons, Coventry, were second, and Messrs. Keynes, Williams & Co., Salisbury, third. For twelve Roses, distinct, Mr. W. Neville, gardener to F. W. Flight, Esq., Twyford, Winchester, was first with good blooms, *Catherine Mermet*, *The Bride*, *Souvenir d'Elise*, and *The Hon. Edith Gifford* being good. Second, Mr. A. Pomeroy, gardener to Dr. D. Seaton, Bitterne. For twelve bunches of stove or greenhouse flowers Mr. Budd was first, staging good Orchids, *Stephanotis floribunda*, *Æchmea fulgens* and *Allamanda Hendersoni*, Mr. J. Evans second. Hardy herbaceous flowers were plentifully staged, the best lot of twelve varieties coming from Messrs. Cheal & Son, Crawley. Mr. R. West, gardener to J. R. Wigram, Esq., Northlands, Salisbury, was second, and Mr. Evans third. For twelve Carnations and Picotees, six of each, Mr. W. Clements, Ford, Salisbury, was easily first, as also for twelve Carnations in not less than six varieties, and for twelve Picotees; in all cases the flowers were fine. For twelve Dahlias, not less than eight varieties, Mr. West took leading honours, Mr. Neville being second. The best Pompon Dahlias staged in threes were from Mr. J. Evans. Second, Messrs. Cheal. For the best epergne decoration Mr. Cypher was well ahead with a good arrangement of choice flowers. Second, Miss A. Hobley. Messrs. Perkins were invincible in the classes for ball and bridal bouquets, staging in both instances in their usual style. Mr. J. R. Chard, Stoke Newington, and Messrs. Drover, Fareham Nurseries, were second in the respective classes. For six buttonhole bouquets Messrs. Perkins were first; Mr. Garner, gardener to Mrs. Braddyll, Amberwood, Christchurch, was second. Baskets of wild flowers and Grasses were a strong feature. Miss K. Golding, Winchester Road, Portsmouth, was first, and Miss A. Hobby second, both staging well.

FRUIT.—This was staged in large quantities, and with the exception of the black Grapes, which were generally rather short of colour, made a fine display, as many as 116 bunches of Grapes being staged. For six dishes of fruit, Pines excluded, there were eight competitors. After a close scrutiny the Judges awarded premier honours to Mr. W. Iggulden, gardener to the Earl of Cork, Marston House, Frome, for a generally good collection, comprising *Madresfield Court Grapes*, medium-sized bunches and berries, well coloured; *Muscat of Alexandria*, good *Hero of Lockinge Melon*, *Moorpark Apricot*, *Sea Eagle Peaches*, extra good, and *Figue d'Or Figs*. Mr. W. H. Ward, gardener to the Earl of Radnor, Longford Castle, Salisbury, was a close second; *Muscat of Alexandria*, and *Madresfield Court Grapes*, *Hero of Lockinge Melon*, and *Royal George Peaches* being his best dishes. Mr. G. Inglefield, gardener to Sir J. Kelk, Bart., Tedworth, Marlborough, was third, also staging well. large clusters of well-coloured *Black Hamburgh Grapes* and richly-coloured *Elruge Nectarines* being conspicuous. For three bunches of black Grapes there were five competitors. Mr. Inglefield took the leading position with *Black Hamburgh*, fine in bunch, berry, and colour. Second, Mr. F. Bennett, nurseryman, Posbrook, Titchfield; third, Mr. Ward, all staging well. For three bunches of white Grapes there were six competitors. Mr. N. Molyneux, gardener to J. C. Garnier, Esq., Rooksbury Park, Wickham, Fareham, was distinctly first with *Muscat of Alexandria*, long shapely bunches, extra large berries, and only needing a trifle more colour to make them perfect. Mr. Inglefield was second, showing the same variety, and Mr. H. W. Ward third. For two bunches of black Grapes eight staged. Mr. J. Allen, gardener to Captain the Hon. V. Montagu, Wherwell Priory, Andover, was placed first with *Alicante*, medium sized bunches, berries, and colour. Mr. H. Innes was second with *Black Hamburgh*. Mr. Curtis, gardener to J. S. Dixon, Esq., Holly Bank, Hythe, third. Some good judges thought the latter should have been placed first. Mr. Allen also took premier honours for two bunches of white Grapes with *Muscat of Alexandria*, shapely bunches of good colour. Mr. Innes second with *Buckland Sweetwater*. Mr. Curtis third. Nine staged single bunches of black Grapes, the best coming from Mr. Inglefield, a medium sized bunch of *Black Hamburgh* well finished gaining him the award. Mr. Iggulden was second with *Madresfield Court*, well coloured; and Mr. F. Bennett third. The best single bunch of white Grapes was a perfect one in every respect of *Muscat of Alexandria* from Mr. N. Molyneux, who was first amongst seven other competitors. Mr. E. Varney was second with *Buckland Sweetwater*, large in bunch and berry; and Mr. Ward third. For one Pine Mr. J. Evans won with *Smooth Cayenne* of fair quality; Mr. Budd following.

Scarlet-flesh Melons were sparsely shown. The best *Blenheim Orange* was from Mr. J. Evans; second, Mr. R. Woodfine, gardener to Major Boyd, Emsworth House. *Green-flesh Melons* were more numerous staged. Mr. W. Pope, gardener to the Earl of Carnarvon, Highclere Castle, Salisbury, was first with *Hero of Lockinge*; Mr. T. Annalls, gardener to T. C. Shenton, Esq., Twyford, Winchester, second; Mr. H. W. Ward third. For the best dish of six Peaches there were eleven

competitors, the first prize falling to Mr. J. Allen for extremely good *Barrington*; *Sea Eagle* from Mr. Iggulden, and *Royal George* from Mr. N. Molyneux being second and third respectively. For the best dish of six *Nectarines* the same number competed, Mr. J. Budd being first with capital *Elruge*; Mr. Inglefield was second, and Mr. Iggulden third. For six dishes of hardy outdoor fruit, distinct, Mr. J. Allen was easily first with extra fine *Gooseberries*, *Raspberries*, *Black and Red Currants*, and *Apricots*; second, Mr. R. West, staging well.

VEGETABLES.—These were a strong feature of the Show, as they always are at Southampton. Classes were provided for collections of twelve and nine varieties, two sorts of Potatoes being allowed in both classes. In the former class there were but three competitors, first honours falling to Mr. T. Wilkins, gardener to Lady Theodora Guest, Inwood House, Henstridge, Blandford, for a capital all-round lot. *Rousham Park Onion*, *Veitch's Autumn Giant Cauliflower*, *Green Globe Artichokes*, *Intermediate Carrot* (extra fine), *Sutton's Seedling Potato*, *Duchess Pea*, *Jersey Lily Turnips*, *Canadian Wonder Bean*, *Carter's Iris Round Potato*, and *Perfection Tomato* were the leading dishes. Mr. C. J. Waite, gardener to Col. The Hon. W. P. Talbot, Glenhurst, Esher, was a close second, with *Golden Rocca Onion*, *Glenhurst Favourite Tomato*, *Stourbridge Glory Kidney*, and *Chiswick Favourite Round Potatoes*, and *Ne Plus Ultra Runner Bean*. Mr. W. Pope was a good third. For nine varieties there were five competitors, Mr. Inglefield being first, staging a good lot; Mr. Allen second, and Mr. N. Molyneux third. Messrs. Suttons provided the prizes for six dishes, to include two varieties of their sending out. For these ten competed Messrs. Waite, Wilkins, and Pope taking the honours in the order named. For Messrs. Webb's prizes, Messrs. Waite and Pope were first and second respectively, with varieties similar to those named previously, all staging well.

Mr. B. Ladhams staged, "not for competition," a capital lot of cut, hardy, and herbaceous flowers, which were much admired.

LEICESTER SHOW AND FRUIT CONFERENCE.

TUESDAY, AUGUST 5TH.

THE annual horticultural Exhibition in the Abbey Park, Leicester, has gained the well-deserved reputation of being one of the best in England, and it invariably attracts a large muster of horticulturists and the public. The Show on Tuesday last was no exception to the rule; the weather was brilliant in the extreme, the heat being pleasantly tempered by a slight breeze, and the beautiful park, now in its best condition, was consequently thronged with thousands of visitors. Very rarely do we see such crowds of people at shows in the south of England and the metropolitan district. It is quite refreshing to find that flower shows have not lost their power of attracting the multitude, and it must be a source of intense satisfaction to all the officials to find such results repay them for their exertions. The Leicester Show is peculiar in the respect that it is entirely under the management of a Committee appointed by the Corporation, and with the help of the courteous and experienced superintendent of the park, Mr. John Burn, they have succeeded in rendering the Show first-rate from a horticultural point of view, and highly successful as a popular holiday and means of innocent recreation for the citizens of a populous town.

Four large tents were filled with exhibits, and in every case the plants, flowers, fruits, or vegetables were of praiseworthy quality. We can, however, only give a brief summary of the leading features, with the names of the prizewinners, for time did not permit much note-taking.

In the principal plant tent the chief features were the groups both competing and non-competing. Messrs. B. S. Williams & Son, Upper Holloway, London, had a grand group of fine-foliage plants, including *Sarracenias*, which were highly commended. The competing groups were bold and effective of the usual style. Messrs. Johnstone of Stoneleigh; G. Barry, gardener to H. Snow, Esq., Stoneysgate; J. Mawbey, New Humberston; and J. & H. Hickling, Loughborough, were the prizetakers in the order named. Then there were classes for *Coleuses*, *Begonias*, *Zonal Pelargoniums*, *Fuchsias*, *Ferns*, and stove and greenhouse plants, which occupied considerable space, and included some admirably grown plants. The principal winners in the five first-named classes were Messrs. J. Roberts, Johnston, Barry, Rogers, and Hassell. This tent was, however, so thronged with visitors early in the day that it was impossible to obtain details of all the exhibits.

CUT FLOWERS.

Division B, for cut flowers, open to all.—Immediately opposite the entrance on the centre table was an exceedingly handsome group of Orchids from Messrs. F. Sander & Co., of St. Albans. Very conspicuous were well-flowered specimens of *Cattleya aurea*, *C. Gaskelliana*, *C. Schofieldiana*, and the rare and beautiful *Sobralia xantholeuca*; a long raceme of *Renanthera Lowi* was also sent, and attracted much attention, having two distinct and differently marked kinds of flowers; *Disa grandiflora*, *Cypripedium Curtisii*, and numbers of *Odontoglossums*, *Oncidiums*, and *Dendrobiums* were also shown. The group was fringed by *Maidenhair Ferns*, and had a centre of *Bamboos*. Following on the centre table was a group of *Tuberous Begonias*, double and single cut flowers, from Mr. B. R. Davies, Yeovil, Somerset; also a remarkably fine group of these showy plants from Messrs. J. Laing & Sons, Forest Hill Nurseries, London. A stand of Carnations (Mrs. Reynolds Hole) from Mr. J. House, Peterborough, attracted much notice. This variety is coming into favour rapidly as useful for cutting.

For twelve bunches of stove or greenhouse cut flowers Mr. P. Blair,

Trentham Gardens, was well first with a fine stand of Orchids. Of hand bouquets there was an extensive display, Messrs. Perkins & Son of Coventry being placed first, Mr. P. Blair second, and Messrs. A. W. Smith & Co., Hawksbury, near Coventry, third. For bridal bouquets Messrs. Perkins & Son were again first; Messrs. Hewitt & Co., Birmingham, second; and Messrs. J. R. Pearson third. For a wreath of white flowers Messrs. Perkins & Son were first; Messrs. Thomson & Co., Birmingham, second; Messrs. Pearson & Sons highly commended. With twelve Zonal Pelargoniums, three trusses of each, Messrs. Pearson and Sons were well first with fine blooms shown in their usual style, excellent varieties being represented with several unnamed seedlings. Mr. Rogers, nurseryman, Belgrave, was second; and Mr. Hassell, Belgrave, third. A collection of Pansies, Pentstemons, Phlox, Pinks, &c., came from Mr. John Forbes, Hawick, N.B.

Cut Roses were shown to great advantage. For thirty-six Roses, single blooms, Messrs. Harkness & Sons, Bedale, were first with large fresh blooms. Well arranged and especially fine were Auguste Rigotard, May Quennell, Duke of Wellington, Horace Vernet, Madame Cusin, Marie Baumann, A. K. Williams, &c. The Rev. J. Pemberton, Havering, Essex, was second, and Messrs. Perkins & Son were third. For twenty-four Roses, Messrs. Harkness & Son were again first; Mr. H. Merryweather, nurseryman, Southwell, Notts, second; and the Rev. J. Pemberton third. For twelve Teas or Noisettes, Messrs. Harkness and Son were first, Messrs. James Cocker & Sons, Aberdeen, second, and Mr. H. Merryweather third. A stand of twelve very fine flowers of Her Majesty was shown by Messrs. James Cocker & Sons, also of Horace Vernet, by Messrs. Harkness; Mrs. John Laing and Chas. Lefebvre, by Messrs. Perkins & Son; and Earl of Dufferin, by Mr. H. Merryweather, who also staged twelve each of Mrs. J. Laing and Marie Baumann. The prizes offered in this class were won, first, by Messrs. Harkness with Horace Vernet; second, Messrs. Cocker, with Her Majesty, and third, Mr. H. Merryweather, with Earl of Dufferin. For twelve Roses, single blooms, grown by amateurs, first, Mr. M. Whittle, Belgrave; second, Rev. E. N. Pochin, Barkby Vicarage; and third, Mr. Thos. Battersby, Blaydon-on-Tyne. With six Roses, Mr. M. Whittle was again first, Mr. Pochin second, and Mr. S. Green third. For six Teas or Noisettes Mr. Whittle was first, and Mr. T. Battersby second.

Adjoining these was a large exhibit of cut flowers of Tuberous Begonias exhibited by Mr. Davis. For twelve Carnations Mr. W. Ward, Fuller Street, Leicester, was first; Mr. B. Simonite, Sheffield, second; and Messrs. Thomson & Co., Sparkhill Nurseries, Birmingham, third. With twelve Picotees.—First, Mr. W. Ward. Second, Messrs. Thomson. Third, Mr. B. Simonite. For Carnations, single bloom, Mr. W. Ward, was first with Robert Lord, the first exhibitor being also first for Picotee, single bloom, with Favourite, a very fine flower.

A collection of Tomatoes shown by Messrs. Hewitt & Co. of Birmingham, not for competition, was commended by the Judges. The prizes offered for twelve bunches of hardy herbaceous flowers brought a large competition, the first prize going to Messrs. Harkness and Sons, the second to Mr. Thos. Battersby, the third, Messrs. Hickling, Loughborough. For twelve bunches hardy annuals Messrs. Biddles & Co. were first, Messrs. Hickling second, and Mr. J. Cox third. A handsome collection shown by Messrs. Pearson, not for competition, was highly commended.

FRUIT.

In division C, fruit, open to all, the first prize for a collection of fruit, nine distinct, was awarded to Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston, Derby, for excellent produce, comprising Black Hamburgh, Muscat of Alexandria, and Foster's Seedling Grapes, a Queen Pine, a fine Countess Melon, Bellegarde Peaches, Lord Napier Nectarines, Apricots, and Circassian Cherries. The Black Hamburgh Grapes were well coloured, moderate sized bunches, but small in berry. The Muscats were very fine bunches; the Peaches, Nectarines, and Melon especially fine. Mr. J. Edmonds, gardener to the Duke of St. Albans, was second, and Mr. P. Blair, Trentham Gardens, third. For a collection of six dishes of fruit Mr. Goodacre was again first, showing Black Hamburgh and Muscat of Alexandria Grapes, a Queen Pine, Countess Melon, Dymond Peach, and Lord Napier Nectarine, the three latter being of very high quality. Mr. P. Blair was here placed second, and Mr. J. Edmonds third. In the class for four dishes of fruit Mr. P. Blair was first, Mr. J. Edmonds second, Mr. Robert Shaw, Garendon Park, third, and Mr. C. Stacey, Manor House Cottage, Oadby, fourth. The best Pine Apple came from Mr. Goodacre, Mr. J. Edmonds being second, and Mr. P. Blair third.

For two bunches of black Grapes Mr. A. McVinish, Lockington Hall, Derby, was first with grand examples of Black Hamburgs, the best in the Show. Mr. G. Lofley, Knighton Church Road, Leicester, second, with only slightly inferior samples; Messrs. Hickling, Loughborough, third. For two bunches Muscat of Alexandria Mr. McVinish was again first with the best Muscats shown, Mr. P. Blair second, and Mr. Goodacre third. A class was provided for two bunches of any other variety of white Grapes, and Mr. P. Blair was first with grand bunches of Duke of Buccleuch; Mr. Goodacre second with Foster's Seedling, very fine; Mr. R. Shaw, Garendon Park, third.

For six Peaches, Mr. W. H. Divers, Ketton Hall Gardens, Stamford, was first with superb fruit of Crimson Galande; second, Mr. Goodacre; third, Mr. George Barry, gardener to H. Snow, Esq., Stoneygate, Leicester. For six Nectarines Mr. Divers was again first with Lord Napier, Mr. Goodacre second, and Mr. McVinish third. Melons were numerous shown, Mr. R. Shaw being first for a green-fleshed variety, and Mr. A. W. Hainsworth first for a scarlet-fleshed variety. Mr.

McVinish was first for a dish of Cherries, and Mrs. Perry Herriek, Beau Manor, Loughborough (gardener, Mr. A. Hamsher), first for a dish of Figs.

VEGETABLES.

Vegetables were exceedingly well shown, Mr. Robert Shaw, Garendon Park, being first with a fine collection. For three Cauliflowers Mr. John Lambert, Onslow Hall Gardens, Shrewsbury, was well first with good samples. Turnips, Carrots, Onions, and Potatoes were all shown in fine condition, and the entries were very numerous. The same remarks also equally apply to the exhibits of Peas and Beans. Cucumbers were fine, especially the first prize brace shown by Mr. J. Goadby, 31, Watling Street, Leicester. The finest display of vegetables in the Show, however, was undoubtedly a collection of twelve varieties shown by Mr. John Lambert, Onslow Hall, Shrewsbury, all fine examples, and superbly staged. Tomatoes were numerous and good, the first prize for twelve fruits going to Mr. P. Blair for grand specimens of Hackwood Park Prolific. Currants and Gooseberries were also good. Several dishes of Waterloo Strawberry attracted much notice from their large size and fine dark colour.

A large tent was devoted to amateurs' and cottagers' productions, and the classes throughout were well filled. The quality of the exhibits, both cut flowers, fruits, and vegetables, was all that could be wished, but in the arrangement of bouquets, baskets of flowers, buttonholes, sprays, &c., there was too much formality.

THE CONFERENCE.

The Conference of the British Fruit Growers' Association was held in the afternoon, James Ellis, Esq., M.P., in the chair. There was a very large attendance of ladies, gentlemen, and horticulturists interested in the subjects dealt with. The meeting was most successful, the programme including admirable papers on "Cherries and Plums," by Mr. T. Francis Rivers; "Fruits for Leicestershire," by Mr. W. Ingram, Belvoir Castle Gardens; "Apples for the Midlands," by Mr. A. H. Pearson; and "Pruning," by Mr. G. Bunyard. A discussion followed to which the Chairman contributed some important observations, and the business of an exceedingly successful meeting concluded with a vote of thanks to the readers of the papers and the Chairman, which was carried by acclamation.

The members of the Association were entertained at luncheon by the Mayor and Corporation, and in being called upon to respond for the visitors, Mr. Lewis Castle, the Secretary, referred briefly to the objects in view, and the Chairman made interesting and suggestive remarks appropriate to the occasion.

OXFORD CARNATION AND PICOTEE UNION.

AUGUST 5TH.

To most florists the circumstances attending the formation of the Oxford Carnation and Picotee Union will be so familiar that their recapitulation is not necessary. Up to a few years ago Mr. E. S. Dodwell, its Secretary and Treasurer, had been one of the most prominent members of the National Carnation and Picotee Society, but subsequently resigned his connection with it for reasons that need not be gone into on the present occasion, having been fully treated in the past. That one so long and closely associated with the Carnation should lose his interest in the flower after severing his connection with the Society devoted to its interests was not to be expected for a moment, but some may have thought that after years of active work in promoting the interests of Carnations the veteran florist would leave the work in other hands and devote his attention to the Carnation as a home flower. Not so Mr. Dodwell. He was not tired of work, though advancing in years, and so he determined to have a society of his own. The Oxford Union has now been established five years, and according to Mr. S. Barlow, who responded to the toast of the Union at the luncheon on the afternoon of this year's exhibition, it has increased yearly in numbers. Certainly its show is a unique one. Mr. Dodwell devotes the grounds of his pleasant suburban residence at Oxford to it, and in a garden of Carnations, for such it is, the surroundings are at once beautiful and appropriate. There are Carnations and Picotees on every hand, the choicest products of every celebrated raiser, and in themselves a source of interest largely supplementing that of the show.

To turn to the latter, any consideration of it must be tempered by recollections of the season. When experienced florists cannot remember such a one, and northern growers have had scarcely a glimpse of sunshine since May, there was cause for astonishment at the excellence of the exhibition. Northern and Midland growers mustered strongly, but the honours of the day in the two largest classes fell to a London grower, Mr. M. Rowan, whose successes at Chiswick may be remembered. A strong contingent came from Birmingham, and their exhibits included at least one remarkable feature in a magnificent new scarlet bizarre Carnation, named C. H. Herbert, which is referred to further on, and which may eclipse Robert Houlgrave, just as Mr. Barlow's masterpiece has eclipsed Admiral Curzon and other famous bizarres. Mr. Dodwell also had a splendid new heavy rose-edged Picotee, which was honoured by the Judges, and named Little Phil, a distinct and lovely variety. A striking feature of the Show was the prominent manner in which yellow grounds were shown. Formerly the attention of florists was largely devoted to the white grounds, and they are not likely to lose their position as the more important section, still the yellows have gained ground rapidly, and the number of good varieties is being rapidly augmented. Most of the classes were for a small number of blooms, but nearly all were well filled. For instance, the largest class for Carnations was for

twelve blooms, and there were eight competitors, these stands forming an excellent and interesting class. A very beautiful stand came from Mr. M. Rowan, Manor Street, Clapham, London, S.W., composed of a very fine bloom of John Buxton, a good flower of Robert Houlgrave, a charming bloom of Sarah Payne, an equally good George Melville, John Whitham, Gordon Lewis, Rob Roy, Matador, Rifleman, Fred, J. D. Hextall, and a charming example of Jessica. The freshness and fulness of Mr. Rowan's flowers were very remarkable, and they were perhaps an improvement on his excellent stand at Chiswick. Mr. W. Reed, gardener to Mr. Dodwell, Stanley Road, Oxford, followed; his back row flowers—Robert Houlgrave, a seedling pink and purple bizarre, Thomas Moore and Thalia, being a very beautiful quartette. The last named was a perfect flower, and Robert Houlgrave was better than Mr. Rowan's fine bloom of the same variety. George Melville and Mrs. Matthews were also charming flowers. The third prize was won by a neat stand from Messrs. Thomson & Co., Birmingham, in which Thalia, Sarah Payne, and the new scarlet bizarre C. H. Herbert, a really grand bloom, large, finely proportioned, smooth, and well filled, somewhat resembling Robert Houlgrave, but brighter in colour, were most conspicuous. Mr. Robert Sydenham, Birmingham, had a capital stand, comprising good blooms of George Melville, Master Fred (a large, well filled example), Matador, and Gordon Lewis, and was placed fourth; Mr. G. Chaundy of Oxford was fifth (Sportsman, very good); Mr. A. R. Brown sixth; Mr. J. Walker, Thame, seventh; and Mr. H. Geggie eighth. There were thirteen stands of six blooms, and the principal prize fell to Mr. T. Lord for Biddy Malone, a finely formed flower, smooth, charmingly coloured, and very fresh, Richard Dean, Robert Lord, Harrison Weir, John Keet, and Squire Meynell. Mr. J. S. Hedderly was second with Rifleman, George Melville, Robert Houlgrave, Sportsman, a rose flake seedling, and William Skirving; and Mr. S. Barlow third with Sir Garnet, Robert Houlgrave, E. S. Dodwell, Dr. Foster, Sportsman, and J. D. Hextall, both neat stands. The fourth prize went to Mr. Joe Edwards; the fifth to Mr. W. L. Walker, Reading; the sixth to Mr. W. Bacon; the seventh to Mr. C. Phillips; the eighth to Mr. H. Startup; and the ninth to Mr. J. Lakin.

The class for twelve Picotees brought nine competitors, this forming a similarly excellent display to that in the corresponding Carnation class. Mr. M. Rowan was again successful in carrying off the principal prize, and his stand, if hardly of so high a class as the Carnations, was an unquestionably good one. The freshness and smoothness of his flowers were very much admired. His varieties were a finely developed example of Brunette, a beautiful Mrs. Payne, Duchess, Nellie, Edith D'Ombra, a capital bloom of Favourite, Mrs. Chancellor, Mrs. Dodwell, Mrs. Sharp, Clara Penson, Thomas William, and Amy Robsart. Mr. Robert Sydenham, who gains ground every year, took second place with Lady Homesdale, Dr. Epps, Mrs. Bower, Morna, Novelty, Favourite, Lady Louisa, Ann Lord, Mr. A. Chancellor, Daisy, Muriel, and a fine bloom of Ethel. This good stand did credit to Mr. Sydenham. The third prize stand of Mr. Dodwell was also a very good one, and comprised several admirable flowers, amongst them two splendid seedlings, 680 (heavy scarlet edge), and 784, a heavy rose edge, the latter a magnificent variety, smooth and refined, subsequently selected as the premier Picotee, and named Little Phil. The fourth prize went to Messrs. Thomson & Co., for a fresh smooth stand, the fifth to Mr. A. R. Brown, the sixth to Mr. G. Chaundy, the seventh to Mr. T. Anstiss, the eighth to Mr. H. Geggie, and the ninth to Mr. J. Walker. There were seventeen stands of six, a beautiful class. Mr. A. W. Jones, Birmingham, was placed first with small flowers, but fresh and well finished. The varieties were Mrs. Sharp, Muriel, Thomas William, Clara Penson, Miss Horner, and Edith D'Ombra. Mr. J. Witham was second with Zerlina, Miss Flowdy, Clara Penson, Gertrude, John Smith, and Imogen; and Mr. J. S. Hedderly third with Favourite, Muriel, John Smith, Thomas William, Zerlina, and Mrs. Sharp, the latter a beautiful flower. Mr. W. Bacon was placed fourth, Mr. Nutt fifth, Mr. Lakin sixth, Mr. J. Rebbeck seventh, Mr. W. L. Walker eighth, and Mr. J. Edwards ninth.

There were five stands of six yellow grounds, Mr. Dodwell winning with Alfred Grey, Tournament, Patricia, Queen of Hearts, Rachel, and Nancy, all beautiful blooms. Mr. Chaundy was second with Alfred Grey, Queen of Hearts, Patricia, Ursula, Rachel, and Nora. Mr. Anstiss was third; Messrs. Thomson & Co. fourth; and Mr. R. Sydenham fifth.

There were nine stands of selfs and Fancies, and Mr. Dodwell was victorious with a charming stand, comprising Gladys, The Maestro, Schlieben (Benary), Stadtrath Bail (Benary), Norah, Terra Cotta, and six seedlings; 761, a crimson self, being very rich in colour. Mr. G. Chaundy was second with a stand of seedlings; Mr. R. Sydenham third with a good stand; and Mr. A. R. Brown fourth; the remaining prizes falling to Messrs. Thomson & Co., M. Rowan, W. L. Walker, T. Anstiss, and J. Walker. There were thirteen stands of six, and Mr. Thos. Lord won with a beautiful stand. He had Thalia, Sparkler, Gladys, Mrs. Price, Tom Pinch, and a seedling yellow ground, rose flaked. Mr. F. Nutt was second with a splendid Germania, Budge, a good Joe Willett, a fine Almira, Mrs. Muir, and The Moor. Mr. S. Barlow was third; and Mr. T. Foulkes fourth; five other prizes being awarded.

Single specimens were extensively shown both in the case of Carnations and Picotees. In the rose flakes Mr. Lakin was first with Mrs. Gibson, Messrs. Thomson & Co. second with Robert Thomson and third with Thalia, Mr. Geggie fourth with a seedling, and Mr. Rowan fifth with Thalia. In the scarlet flakes Mr. Rowan was first with John Witham and second with Matador, Mr. Hedderly third with Sportsman, Mr.

Dodwell fourth with a seedling, and Mr. Chaundy fifth with Sportsman. In the purple flakes Mr. Rowan was first and second with Gordon Lewis, Mr. Sydenham third with a seedling, Mr. Geggie fourth with a seedling, and Mr. Edwards fifth with Sarah Payne. In the crimson bizarres Mr. Rowan was first and second with J. D. Hextall, Mr. Dodwell third with Joseph Lakin, Mr. Sydenham fourth with J. D. Hextall, and Mr. Hedderly fifth with Master Fred. In the scarlet bizarres Messrs. Thomson & Co. were first with C. H. Herbert, Mr. Dodwell second with Robert Lord, Mr. Chaundy third with a seedling, Mr. Dodwell fourth with Robert Houlgrave, and Mr. Rowan fifth with the same variety. In the pink and purple bizarres Mr. Lord was first with Eccentric Jack, Mr. Sydenham second with J. Harrison, Mr. Hedderly third with Wm. Skirving, Mr. Rowan fourth with Sarah Payne, and Mr. Edwards fifth with Sir Garnet Wolseley. In the yellow grounds Mr. Nutt was first with Germania, Mr. Chaundy second with the same variety, Mr. Dodwell third with Queen of Hearts and fourth with Germania, and Mr. Chaundy fifth with Queen of Hearts.

The single specimen Picotees were classed as red and its hues, broad, medium, and light edge, and purple ditto. The awards were as follows:—Broad red edge, Mr. Dodwell first and third with seedlings, Mr. Rowan second with Mrs. Sharp, and fourth with Edith D'Ombra; Mr. Sydenham fifth with Dr. Epps. Medium red edge.—Mr. Rowan first with Mrs. Payne, and second with Nellie; Mr. A. W. Jones third with Miss Horner; Mr. Dodwell fourth with Nellie, and Mr. R. Sydenham fifth with Lady Holmesdale. Light red edge.—Mr. Chaundy first with Favourite, Mr. Dodwell second with the same variety, Messrs. Thomson & Co. third with Mrs. Herbert, Mr. Jones fourth with Thos. William, and Mr. Rowan fifth with Mrs. Gorton. Broad purple edge.—Mr. Dodwell first with Amy Robsart, Mr. Sydenham second with Mrs. Chancellor, Mr. Jones third and fourth with Muriel, Mr. Geggie fifth with a seedling. Medium purple edge.—Mr. Rowan first with Muriel and third with Mary, Mr. Walker second with Muriel, Mr. A. R. Brown fourth with Juliette, and Mr. Anstiss fifth with Baroness Burdett Coutts. Light purple edge.—Mr. Sydenham first and fifth, Mr. A. W. Jones second and fourth, and Messrs. Thomson & Co. third, all with Clara Penson.

Carnations in epergnes and glasses were best shown by Mrs. G. B. Dodwell and Mr. W. Hovell, the former having a charming epergne, chiefly composed of Picotees and Maidenhair Ferns. Equal third, Mr. Wardell and Messrs. Thomson & Co. Prizes were awarded to Mr. Anstiss and Mrs. G. B. Dodwell for buttonhole bouquets of Carnations; also to Mr. Walker of Thame, prizes for bouquets going to Mrs. G. B. Dodwell, Mr. Wm. Gawn, Mr. T. Anstiss, Mr. W. Hovell, and Mr. Walker of Thame. In one or two special classes for Carnations several of the exhibitors previously named won prizes.

The premier blooms were as follows:—Bizarre and Flake Carnations, C. H. Herbert, exhibited by Messrs. Thomson & Co., a scarlet bizarre, described above; also awarded a certificate of merit. Picotees: Little Phil, exhibited by Mr. Reed, gardener to Mr. Dodwell, heavy rose edge. Fancies: Seedling 467, shown by Mr. Dodwell, buff ground, flaked with slaty mauve. Selfs: Germania, yellow, shown by Mr. F. Nutt. Yellow grounds: Patricia, shown by Mr. Dodwell, large and handsome bloom, faintly ticked with red, almost a self.

Certificates were awarded to Mr. C. Turner of Slough for the following five yellow grounds:—Countess of Jersey, Mrs. Walford, Mrs. Henwood, Romulus, and Victory; and also for the heavy rose edge Picotee The Rector; to Mr. J. Lakin, for Carnation Annie Lakin, white self; to Mr. Henry Geggie, for Mrs. Lee, white self; to Mr. J. Edwards, for Carnation Mabel, white self; and to Mr. H. Gibbs, gardener to Miss Alice de Rothschild, for Carnation Conqueror, scarlet self.

A luncheon took place in the afternoon, to which about 150 sat down. Mr. Alderman Buckell presided, and Mr. Dodwell, Mr. S. Barlow, the Rev. Mr. Ripon, Mr. Rowan, Mr. Shaw, Mr. Walker, Mr. Hewitt, and Mr. John Ball were among the speakers. The proceedings were very pleasant.



FRUIT FORCING.

PINES.—Prepare houses as they become vacant for re-occupation. If hot water is the agent in furnishing bottom heat, the bed, whether of tan or leaves, must be removed at least once a year, or woodlice will increase rapidly. All brickwork should be scalded and brushed with hot lime, the wood and ironwork with soap and water thoroughly cleansed, using a brush, keeping the soapy water as much as possible from the glass, which should be cleansed inside and outside with water only. If necessary, paint the wood and ironwork, the roof being made as watertight as practicable. Chambered beds, *i.e.*, the hot-water pipes covered with slate or other material, are much in advance of those surrounded or passing through beds of rubble. Those composed of the latter must be turned over and any dirt or small parts removed, to allow the heat given off by the pipes to penetrate uniformly to the bed. Provide fresh tan in other cases. If wet, turn it occasionally on fine sunny days. With hot-water pipes beneath about 3 feet depth of tan is ample; more will be needed where such aid is not provided.

Suckers started in June will soon fill their pots with roots, and must be shifted into larger pots before the roots become closely matted together. Queens may have 9 and 10-inch pots, and those of stronger growth 11-inch pots. Water immediately after potting, and plunge in a bed having a temperature of 90° to 95°. There is no greater mistake in growing Pines than crowding young plants. The plants become drawn and weakly, instead of having a sturdy base. Attend to the bottom heat of beds that have recently been disturbed by the removal of plants, not allowing the heat to exceed 95° at the base of the pots without immediately raising them, as too much heat will disastrously affect plants with fruit or those having the pots filled with roots. Examine the plants about twice a week, and maintain a moist well-ventilated atmosphere. The climatic conditions are now so favourable that Pine plants grow luxuriantly; therefore, discontinue any shading such as may have been employed for an hour or two at mid-day, when the sun was powerful. Admit air plentifully when the temperature ranges from 85° to 95°, affording to fruiting plants a night temperature of 70° to 75° and succession 65° to 70° at night. Reserve another batch of suckers on the stocks for starting at the commencement of September.

FIGS.—Early-forced Trees in Pots.—As soon as the second crop is cleared examine the trees, keeping them somewhat drier at the roots, and the drier condition of the atmosphere, consequent on a free circulation of air, tends to an increase of red spider and scale. Those pests are inseparable from Fig culture in heated houses. Still, the enemies steal a march whenever they get the chance, as cannot well be prevented during the ripening of the fruit; therefore, when that is cleared off the trees recourse must be had to cleansing; and as the foliage and wood are far advanced in ripening, destructive agents may be used at a strength which would not be safe earlier. If, therefore, these pests, and especially scale, have made undesirable progress, syringe the trees with some insecticide, of which there are many advertised, and all good when the instructions are strictly followed. The mixture may be kept from saturating the roots by tying a handful of dry moss round the stem and then raising a sort of pyramid of the same placed about the plants. Badly infested wood should be brushed to dislodge scale, and repeat the syringing in a few days; afterwards sponge thoroughly with tepid water. The trees will not need much further attention, but watering must be attended to, so as to prevent the foliage becoming limp, ventilating to the fullest extent day and night; but protect the trees from heavy rains, which have a tendency to keep the roots active, instead of inducing that rest so necessary for trees subjected to early forcing. Placing trees outdoors, as formerly practised, is not desirable, as the air moisture causes growth, whilst trees kept under glass have complete rest through dryness. If placed outdoors they must be in a sunny position, the pots stood on a layer of ashes, with similar material about them; and though the trees must not suffer from dryness, material must be in readiness to apply so as to throw off heavy rain, in order to prevent the soil becoming sodden. Whether kept under glass or placed outdoors they cannot have too much light and air.

Early Forced Planted-out Fig Trees.—Second crops ripening will need a circulation of air constantly, more, of course, by day than at night. If dull weather prevail a gentle heat in the pipes makes a great difference in the quality of the fruit, and prevents splitting. Watering at the roots must be diminished, syringing discontinued, but a moderate air moisture must be allowed for the benefit of the foliage. A light sprinkling of available surfaces will afford the needful moisture for the benefit of the foliage. If red spider is present, heat the pipes to over 140°, or so hot that the hand cannot endure the heat, and then coat them with a thin wash of sulphur and skim milk, keeping the house closed for an hour or two, then allow the pipes to cool and admit air as usual. By close gathering the fruit syringing may be resorted to, but it is a bad expedient, as a free circulation of warm rather dry air is essential to perfection in Figs, and it acts beneficially on the foliage and wood.

Unheated Houses.—In all but favoured locations and exceptional seasons Fig crops cannot be relied on outdoors. Glass structures for entrapping and retaining sun heat are indispensable, lean-to structures with a southern aspect are best. Success also depends on restriction. Roots allowed to ramble far and deep eat too freely, are not amenable to control. Narrow borders one-third the width of the trees are ample, well drained, and 18 inches to 2 feet deep. That depth of compost will grow more fruit than greater areas. Calcareous matter is essential. Where natural calcareous loam does not obtain, old mortar rubbish to the extent of a sixth will supply calcic matter in a useful form, or chalk may be used with an addition of one-sixth of road scrapings. Figs like lime, also grit, hence marl is a useful application, and for light soils may be used to the extent of a fourth, but it must be a clay marl. The soil must also be firm, not a caked impervious mass, but such that air and water can enter gradually: this will ensure steady supplies of nutrition, and short-jointed wood. Unobstructed light and free ventilation are principles in securing Figs of the choicest description, careful attention being given to details of culture; one of the most important is watering through a mulch of rather lumpy manure. Thin the growths so as to ensure solidified wood through the assimilation of matter elaborated in the leaves fully exposed to light. The finest fruit is had on extensions kept renewed by cutting out worn out and replacing with young. The fruit now is advanced for ripening, therefore spare no pains in freeing of red spider by syringing in the morning and early afternoon. Admit a little air early, increasing it with the sun heat, maintaining through the day a temperature of 80° to 85° with free ventilation, closing early so as to increase to 90° or 95°, and when the sun power is declining a little air may be admitted at the top of the

house, so as to allow the pent-up moisture to escape, the temperature gradually cooling. Water or liquid manure will be required once or twice a week, according to circumstances, in order to keep the soil moist and supply nutrition. Directly the fruit begins to ripen syringing must cease, water be gradually diminished at the roots, a circulation of air secured constantly, freely ventilating when favourable, and husbanding sun heat, not by closing, but by lessened opening of the ventilators, as it is a confined atmosphere that does the mischief, a little ventilation preventing the moisture condensing and the fruit cracking.

MELONS.—Damp and cold weather has been against frame plants. It has favoured those in houses which have been assisted with a gentle warmth in the pipes, and they are finer than usual both in thickness of flesh and quality. Late crops in frames are not setting well; they grow too luxuriantly in moist weather, and set indifferently. The growths should be kept thin, and a little air given constantly, maintaining the warmth by manure or grass mowings placed around the frame, and renewed at intervals. A quantity to create a radical change is not good, but a gentle warmth favours a good set and the swelling of the fruit. Do not neglect to fertilise the flowers daily on plants now in bloom, and go over them frequently for the removal of superfluous growths. Keep the atmosphere dry when the fruit is ripening and setting. Maintain a bottom heat of 80° to 85°; top heat 70° at night and 75° by day. In dull weather admit a little air at 75° if the day is likely to be fine, allowing the heat to rise to 80°, and keeping it through the day at 85° to 90°, closing so as to increase to 90° or 95°. A free circulation of rather dry air greatly improves the finish and flavour of Melons when ripening. If fruit be wanted very late make a last sowing now. Plants for fruiting in October should be planted at once, it being highly important that they have a light and well heated structure.

CHERRY HOUSE.—The buds are as plump as they need be, therefore undue excitement must be guarded against by exposing the trees to the influence of the atmosphere so far as the house will admit, which is the best means of arresting premature growth, to which the Cherry is liable when forced year after year successively. The border must not be allowed to become parchingly dry, but must have copious supplies of water; and if the trees are weak afford liquid manure. To subdue red spider give an occasional washing with the syringe or garden engine. Black aphides attack Cherry trees; keep an eye to them, and whenever they appear promptly assail them with tobacco water. Trees in pots must be regularly watered and syringed to maintain the foliage in good order, for though it may not be capable of much further effort in elaborating sap and storing food it has some, and it is necessary that the leaves perform their functions to the last.

KITCHEN GARDEN.

THE FAILURE OF THE CARROT CROP.—As the season advances the failure of the Carrot crop is more and more apparent. It is likely to prove one of the worst Carrot years on record, the grub having done great damage. Many will find themselves deficient in roots during the winter and next spring unless they try to secure another young crop. It is late for sowing in the open ground, as the roots would not attain a good size before the winter, but wherever there are spare frames some might be profitably devoted to raising late Carrots. A gentle hotbed would be advantageous. In our case we have sown seed in the long frame that is devoted to early spring Carrots, in the same soil after cleaning and stirring it. The French or Early Horn are the only kinds to sow now. Our crop sown in the open three weeks ago is well up, but the snails are troublesome, and they must be dusted with lime or soot every damp morning until the plants are large.

PARSLEY.—This is almost as bad as the Carrots, and immediate attention should be given to providing a young stock. Unfortunately Parsley is slow in growing, and the young plants require a long time to become ready for use, and if sown now, even with the aid of a frame, it will not be very luxuriant by November.

LATE KIDNEY BEANS.—We have only this week gathered the first of our dwarf Beans in the open air. They are later this year than we ever had them, and the runners have been unseen in July, but should the autumn prove fine the late crop may partially compensate for the tardy returns. As all know, the plants are exceedingly tender; they will not bear the slightest frost, and those intended for the latest crop should be sown in frames, or where frames can be placed over them. They require a soil only moderately rich, as a dwarf not over-luxuriant growth is the best for late bearing. The variety Ne plus Ultra is one of the best amongst dwarf Beans.

SHALLOTS.—These should be drawn from the soil and laid out on a walk or some dry place in the sun to mature before storing for the winter. They are very hardy, never being affected with grub or disease, and it is surprising that not more of the Potato Onion is grown, as they are prolific and remarkably good keepers. At present they are chiefly a cottager's vegetable, but they should be grown in all gentlemen's gardens as well. Garlic we never store, but dig it from the ground as it is required.

HERBS.—Now is the time to cut and dry for the winter. There is little or no art in it, but many omit to cut in time, and when the leaves begin falling from Mint it is of little use for drying. Mint, Sage, and Thyme are the leading herbs, but all others should also be secured. They may be cut while dry and placed in a cool airy shed, but do not lay them out in the sun, as this will make the dry leaves very brittle; when dried in the shade the leaves become tough and will hang on the stems for twelve months or more. When dried in a spread-out form they should be tied up in handfuls and suspended from the roof of a dry shed.

ENDIVE AND LATE LETTUCE.—Endive should be sown now ; indeed, there is not much use in sowing after this time, as unless the plants are of a good size by October they will not grow much afterwards, and when they are full sized then they will keep in good condition until far into winter. The best way of raising Endive is to sow the seed rather thinly in drills, and when the plants are ready for transplanting sufficient should be left in the ground to form a crop, while the thinnings must be planted elsewhere. Where there are no means of protecting them they should be planted in a sheltered position, such as by the bottom of a wall or fence. The same remarks apply to Lettuces. Those raised at this time will be found to remain long in use, probably from the end of September till January, and the Cos varieties are much better for winter than the Cabbage sorts.

MISCELLANEOUS.—Thin young Spinach plants to 3 inches apart. Late Turnips may be thinned to 10 inches apart. Clear off all Peas that have done fruiting, and winter greens may be planted in vacant ground. It has been a season of weeds, the excessive moisture favouring their development while offering few opportunities for hoeing them up, but weeding should be resorted to rather than allow the crops to be fettered with weeds. In a dull season it is all the more necessary to admit light and air to them, and this applies as much to the surface of the soil as to the top growth.

PLANT HOUSES.

Crotons.—Plants rooted at various times and now well established in 5 to 7-inch pots, may be placed in others 2 inches larger where Crotons in that size are useful for decorative purposes. All the smaller growing varieties are better in 5 and 6-inch pots, and when they become too large in these the top may be taken off and re-rooted. After the heads have been removed side growths are freely produced, and these make capital plants in small pots, or for growing for yielding good heads. In many forms of decoration Crotons that have small leaves or are a little bare at the base may be used effectively, but they are useless for standing singly. All the Crotons that will be needed should be rooted from the present to the end of next month. Expose the plants to abundance of light, so that their foliage will colour thoroughly. Be careful not to crowd them when room is limited ; it is a good plan to suspend some from the roof of the house. Pass a wire round the pot below the rim and then secure three other wires to it, or, better still, order pots with three holes just below the rim, so that the wires can be passed through. Perhaps the best method of all is to have pans below the pots and secure the wires to these.

Stephanotis floribunda.—If mealy bug is present, shade the house and give a thorough syringing with petroleum and water, one ounce to each gallon of water will be ample. Do not remove the shading until the oil has evaporated. Artificial heat is not indispensable for this plant, but to flower it well abundance of light and air are needed. Ventilate liberally during the day and close early, so that the temperature will rise considerably.

Allamandas.—Young Allamandas that have commenced flowering in 7 to 10-inch pots and trained round four or five stakes will be effective in the conservatory, but before removing them to this structure harden them carefully, and do not place them where they will be exposed to cold draughts. Allamandas in large pots which are full of roots may be top-dressed with cow manure, and supplied liberally with stimulants, or the flowers will be small and the plants will discontinue growth. Where Allamandas are growing in borders it may be necessary to thin the shoots if trained over the roof, so that they do not overshadow the plants beneath them. Plants rooted early in the year may be repotted until they are placed into 9 and 10-inch pots. A position should be selected close beneath the glass fully exposed to the sun.

Anthurium Schertzerianum.—Remove Anthuriums that have completed their growth to an intermediate temperature ; shade them, and keep them liberally supplied with water. Any necessary repotting may be done at once, not using too much soil. The pots should be liberally drained, and the compost light and open. Rooted cuttings of A. Andreanum may be placed in 5 and 6-inch pots, and they will be capital for flowering during the winter. Old outdoor plants can be encouraged to grow by top-dressing them. If their shoots are crowded remove those that are not needed, and insert them in small pots in the propagating frame.

Acalyphas.—Young specimens growing freely in 5-inch pots will now be better in cold frames than in heat, provided they are carefully hardened and the frames are closed early in the afternoon. Root all the cuttings that are available, for whether in 3-inch pots or those of a larger size few plants are more beautiful when well grown. They are propagated easily, and grow rapidly in heat, but when once fairly started they are better in an intermediate temperature, as they do not run up so rapidly.

able at the time. I waited a month for the young queen starting to lay ; at the end of that time she commenced laying drone eggs. I came to the conclusion that she was not fertilised, and the hive being troubled with robbers the bees became less every day. The majority of them were bred prior to September last. I destroyed them, and the queen was very small. I intended sending her to you for inspection, but did not manage it. I thought I would be able to get a swarm and put in the empty hive, but was disappointed, as none of my hives has swarmed.

To the Sandringham hive, which I have mentioned before, I added a box of frames the same depth as the Lanarkshire frames ; the bees took to them almost immediately, and the queen started laying in them very soon. I have fitted slides between the frames ; do you think two taken out at each side will be sufficient to admit the bees into the supers ? It is much wider than the Lanarkshire hive ; the number of bees in this hive is enormous, and had the weather been favourable I should have had some supers filled earlier. It has not been quite so cold with us as with you, but I have had to feed. This hive (Sandringham) had 22 lbs. of sugar from June 12th to July 8th. I had a longer trough fitted to the box-feeder, which I think is an improvement, as the bees have more room. I have tried the bottom feeder and like it very much. I have had a tin fountain made, but it does not work, because the screw is not right.

A neighbour of mine has a hive that swarmed several weeks ago. The week after swarming he examined it ; it contained twelve queen cells. He destroyed all but one, the most forward ; in a few days he looked again and found this cell empty ; he concluded that the young queen had come out. He is now much disappointed to find that this queen (if there is one in the hive) has not commenced laying ; is it because she has not been fertilised ? There has been opportunity enough as regards the weather.

I placed a super on the Sandringham hive, and the bees are working in it well. The fields are white with Clover ; if we only had warmer weather many in this neighbourhood who placed supers on in May have had to take them off and feed them. You mentioned in the Journal recently about bees turning drones out. Mine have turned a number out ; it seems to be general, whether the bees have been fed or not. I have altered my sections this time, making the bottoms narrower and straight, doing away with dividers. I have propped the crate well up off the top of the frames. I have made a calico cover for one of my Lanarkshire hives ; it is a failure as a waterproof. I could not have done it right ; I allowed it to remain in the boiled linseed oil all night, then I squeezed it out in the morning and placed it out to dry.

Will you be kind enough to give a reply to the following ? Are two slides taken out on each side of the hive referred to enough space to admit the bees to the supers ?—C. R.

[Old bees seldom raise satisfactory queens. The best results are obtained from strong hives—the stronger the better—during May, June and July. The present year is an exception ; many queens that were bred in May are still sterile, and may yet be fertilised. Not so, however, with those raised by bees a long time queenless ; they begin to lay drone eggs early. In such cases it is advisable to give several frames of brood with young bees adhering, then good queens may be expected. You did right to enlarge the Sandringham hive. The standard hive is too small for profitable bee-keeping. You also have done right to narrow the bottom rail of section, and to do away with separators. Keep large and strong hives, and the bees will build symmetrical combs. One slide out at each side is quite sufficient to admit bees to supers. Why you have failed to secure a waterproof with calico steeped in boiled oil I cannot understand. I have some very old covers which, if made hollow and filled with water, will remain till evaporated without showing signs of damp on the under side. Steep the cloth in oil until fully saturated, then hang it up to drip, turning it occasionally, until the oil begins to set ; after it is thoroughly dry repeat a second time, or lay it flat and put on the oil with a brush or a cloth.—LANARKSHIRE BEE-KEEPER.]

EXTRACTORS.

" WILL you be kind enough to give me advice through the *Journal of Horticulture* on extractors for extracting honey from box frames, and size of frame that will take full-sized foundation combs ? I have only four hives, so do not want too expensive ones. Any information will be thankfully received.—W. P."

[When large frames are in use extractors are bulky. Shallow frames require a much smaller extractor than large ones, and are otherwise more serviceable. As you have only four hives, and mean to increase your stock, you will not regret adopting shallow-framed hives ; these may be used in combination with deeper ones. The best extractors are those that do not revolve the extracted honey while the combs are being extracted. Any of the dealers will supply you with a suitable one if you let them know particulars.

THE BEE-KEEPER.

QUEENLESS HIVES.

I INTENDED writing ere this to let you know how the queenless hive was going on. I tried it again with a piece of comb containing eggs. The bees raised six queens ; these I reduced to two as soon as I had seen which was the most promising. One of these came out all right, the bees drew the other. I chanced to see a bee carry it out ; it was not quite matured, and the weather was very unfavour-

Comb foundation is made of different sizes, from 4 inches broad to 2 feet; therefore "full-sized foundation combs" is too vague a term to understand.—LANARKSHIRE BEE-KEEPER.]

TRADE CATALOGUES RECEIVED.

James Carter & Co. 237 and 238, High Holborn, London.—*Illustrated Catalogue of Bulbs.*

Alexander Dicksons & Sons, Central Avenue, Belfast.—*Illustrated Catalogue of Bulbs.*

Roozen Brothers, Overveen, near Haarlem, Holland.—*Autumn Catalogue of Dutch and Cape Bulbs and Plants.*

William Bull, 536, King's Road, Chelsea.—*Catalogue of Tuberous Rooted Plants and Bulbs.*



All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Cultivation of Heaths (*W. J. and R.*).—The information you require will be given in an early issue.

Grapes Scalded (*W. B. R.*).—You should have written sooner. The utmost we can do, under the circumstances, is to direct your attention to our reply to "J. W. M.," page 105, last week, and to the references there given.

Seedling Begonias (*J. Jones*).—Though your variety is not equal to the best in cultivation, it is good for decorative purposes, worthy of preservation, and as the raiser you can give it any name you choose that has not been applied to any other Begonia.

Peas (*E. A.*).—We cannot name the variety from the pods sent, nor could anyone do so with accuracy. The only reliable way of ascertaining its name is by sowing with others in a large trial collection, and determining the matter by comparison.

Double Clarkia (*James Carter & Co.*).—The flowering plant you have sent is distinctly attractive. Every flower may be described as double (for absolutely double flowers do not produce seed), and every reddish purple petal is clearly tipped with white. The plant is also dwarf and floriferous.

Chrysanthemum Buds (*H. P.*).—The buds forming now of the late varieties will probably develop blooms about the proper time, but if the buds are set of the early sorts the blooms will possibly have lost their freshness before the autumn shows. You should possess Mr. Molyneux's work and follow his teaching generally, subject to such modifications as you may perceive applicable to your case. As a rule the buds which form naturally in August afford blooms at the right time for showing, the late varieties being set early, and the early sorts set late in the month. This is the best general reply we can give to your short general question.

Figs Unsatisfactory (*Inquirer*).—The letter to which we referred was addressed to two journals, the number of one and the name of the other. It was delivered and opened at this office, but as on reading it we found you appealed by name to another paper we forwarded the letter to our contemporary. It now appears it was intended for us. If you will be good enough to state the position in which the tree is growing, also indicate its age, size, and the length and thickness of the summer growths, taking care to address your letter to the Editor of the *Journal of Horticulture*, 171, Fleet Street, the case shall have our best attention. The information requested is necessary for the preparation of a serviceable reply.

Piping Required for Greenhouse (*W. E.*).—A flow and return 4-inch pipe along the front of the house beneath the staging will give all the heat required for a greenhouse during the severest weather; but to maintain a temperature of 70° you will need six rows of piping the length of the house, and instead of its being a greenhouse it will be a warm stove. We advise a greenhouse temperature—viz., 45° to 50° by artificial means, and you will have a better supply of flowers than from a stove. Winter-flowering greenhouse plants are Camellias, Bouvardias, Tree Carnations, Cinerarias, Primulas, Cyclamen, Cytisus, Epacris, Coronilla glauca, Daphne indica alba, Acacias, Azaleas, and Abutilons. Bulbs, such as Roman and Dutch Hyacinths, Narcissus, and early Tulips are indispensable; and *Deutzia gracilis*, *Dielytra spectabilis*,

Lily of the Valley, and Roses may be forced. Chrysanthemums should be grown for early winter.

Gall-mites on Trees (*S. T.*).—It has been discovered that the Alder is infested by at least four species of the gall-mite tribe. The first you describe, showing itself by silvery patches, usually beneath the leaf, is, we presume, *Erineum Alneum*. The second scatters thickly over the leaves galls of green or yellow tints. This is *Cephaloneon pustulatum*. By the third galls are produced along the nervures, the upper showing most traces. This would be *Phytoptus Alni*, a less frequent kind. Upon the Plane or Sycamore the first gall described is very common; it is the work of *Phytoptus Aceris*, similar to that produced by its congeners that haunt the Lime and the Maple. To *Phytoptus Pruni* must be attributed the raised galls on the Plum, sometimes like purses or clubs in miniature. Continental observers describe another gall-mite of the Plum, which infests the twigs of young trees, and even occasions their death in some instances.

Culture of *Ramondia pyrenaica* (*C. W. M.*).—The plant you name inhabits a somewhat varied area in the Pyrenean and Piedmontese Alps, oft-times on the steep and almost perpendicular faces of the rocks. When so situated, however, it is generally where moisture is in abundance, as it is impatient of drought, preferring protection from hot sun. This, however, is of not so great moment as a plentiful supply of moisture in a well-drained position. Plant it in equal parts of peat and loam, together with a liberal addition of silver sand or grit—it delights to send its tiny fibres into moist sand—and success will invariably attend the operation. From its extremely prostrate habit of growth it is not to be recommended as a border plant, since heavy rains keep the plant almost wholly covered with earth, but on a mound above the ordinary level it may be made as equally at home as in its native habitat. It is chiefly increased from seed, though now and then some few plants throw out offsets; but to detach these with roots is a very dangerous operation, and should always be avoided. Sow the seed as soon as ripe. This will be about the middle of August, and the seedlings will appear the following spring. Do not be discouraged by the slow growth of seedlings, which is remarkable. When the seedlings are of sufficient size they may either be potted or pricked out in small colonies on the rockery. By so doing a goodly patch will soon be made.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*A. O.*).—1, *Tecoma radicans*. 2, *Brugmansia suaveolens*. 3, *Mandevilla suaveolens*. (*A. S.*).—1, *Adiantum amabile*. 2, *Gymnogramma chrysophylla*. 3, *Pteris umbrosa*. We have received boxes of hardy flowers, but no letters from the senders of them. These should always be placed in the boxes with the specimens.

COVENT GARDEN MARKET.—AUGUST 6TH.

BUSINESS brisk with heavy supplies, prices being somewhat lower.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, $\frac{1}{2}$ sieve	0	0	0	0	Grapes, per lb.	1	3	to	3
" Nova Scotia and					Lemons, case	10	0		15
" Canada, per barrel	0	0	0	0	Melons, each	1	0		2
" Tasmanian, p. case	0	0	0	0	Oranges, per 100	4	0		9
Cherries, per $\frac{1}{2}$ sieve	3	6	10	0	Peaches, dozen	1	0	12	0
Currants, Black $\frac{1}{2}$ sieve	4	6	5	0	St. Michael Pines, each	2	0		6
" Red, $\frac{1}{2}$ sieve	3	0	4	0	Strawberries, per lb.	0	2	0	6

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.		
Artichokes, dozen	0	0	to	0	0	Mushrooms, punnet	1	6	to	2	0
Asparagus, bundle	0	0		0	0	Mustard & Cress, punnet	0	2		0	0
Beans, Kidney, per lb.	0	9	1	0	Onions, bnshel.	3	0		4	0	
Beet, Red, dozen	1	0	0	0	Parsley, dozen bunches	2	0		3	0	
Brussels Sprouts, $\frac{1}{2}$ sieve	0	0	0	0	Parsnips, dozen	1	0		0	0	
Cabbage, dozen	1	6	0	0	Potatoes, per cwt.	3	0		4	0	
Carrots, bunch	0	4	0	0	" New, per lb.	0	2		0	6	
Cauliflowers, dozen	2	0		4	Rhubarb, bundle	0	2		0	9	
Celery, bundle	1	0	1	3	Salsafy, bundle	1	0		1	6	
Coleworts, doz. bunches	2	0		4	Scorzonera, bundle	1	6		0	0	
Cucumbers, doz.	2	0		3	Seakale, per bkt.	0	0		0	0	
Endive, dozen	1	0	0	0	Shallots, per lb.	0	3		0	0	
Herbs, bunch	0	2		0	Spinach, bnshel	1	0		2		
Leeks, bunch	0	2		0	Tomatoes, per lb.	0	3		0	5	
Lettuce, dozen	0	9	1	3	Turnips, bunch	0	4		0	0	

CUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.	
Arum Lilies, 12 blooms ..	2	0	to	4	0	Maidenhair Fern, dozen				
Asters, per bunch, French	0	9	1	0	bunches	4	0	to	9	0
„ English, 12 bnchs.	3	0	6	0	Mignonette, 12 bunches..	2	0	4	0	
Bouvardias, bunch ..	0	6	1	0	„ Fr., large bnch	0	0	0	0	
Carnations, 12 bunches ..	4	0	6	0	Pansies, dozen bunches ..	1	0	2	0	
„ 12 blooms ..	1	0	2	0	Pelargoniums, 12 trusses	0	9	1	0	
Calceolaria, doz. bunches	4	0	6	0	„ scarlet, 12 bnchs	3	0	6	0	
Cornflower, doz. bunches	1	6	3	0	Pinks (various), doz. behs.	3	0	6	0	
Dahlias, dozen bunches..	3	0	4	0	Primula (double) 12 sprays	0	6	1	0	
Eschscholtzia, 12 bunches	2	0	4	0	Ranunculus, doz. bunches	0	0	0	0	
Encharis, dozen ..	4	0	6	0	Roses (indoor), dozen ..	0	6	1	6	
Forget-me-not, doz. bnch.	1	6	4	0	„ Moss (Eng.), 12 bch.	6	0	12	0	
Gardenias, 12 blooms ..	2	0	4	0	„ Red (Eng.) 12 bch.	2	0	6	0	
Iris, various, dozen bnchs.	0	0	0	0	„ Red, 12 blooms ..	1	0	2	0	
Lapageria, 12 blooms ..	2	0	4	0	„ Tea, white, dozen..	1	0	3	0	
Gladiolus, 12 bunches ..	4	0	9	0	„ Yellow	2	0	4	0	
Gypsophila, per bnch, Fr.	1	0	1	6	Stocks, dozen bunches ..	3	0	6	0	
Lilium, various, 12 blms.	0	6	1	0	Sweet Peas, 12 bunches	2	0	4	0	
„ longiflorum, 12 blms.	2	0	4	0	Tuberose, 12 blooms ..	0	3	0	9	
Marguerites, 12 bunches	2	0	6	0						

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, dozen ..	6 0	12 0	Geraniums Scarlet, p. doz.	3 0	6 0
Arbor Vitæ (golden) doz.	6 0	8 0	Heliotrope, per doz. ..	4 0	8 0
Azalea, various, per dozen	0 0	0 0	Hydrangea, doz. pots ..	9 0	18 0
Calceolaria, per doz. ..	6 0	9 0	Lilium lancifolium, doz.	9 0	18 0
Climbing Plants, various,			" longiflorum, doz.	11 0	24 0
dozen pots	4 0	9 0	Lily of the Valley, 12 pots	0 0	0 0
Crassula, per dozen ..	9 0	24 0	Lobelia, per doz.	3 0	4 0
Cyclamen, per dozen ..	0 0	0 0	Marguerite Daisy, dozen	6 0	12 0
Deutzia, 12 pots	0 0	0 0	Mignonette, per dozen ..	4 0	6 0
Dracæna terminalis, doz.	24 0	42 0	Musk, per dozen	2 0	4 0
" viridis, dozen ..	12 0	24 0	Myrtles, dozen	6 0	12 0
Epiphyllum, per dozen ..	0 0	0 0	Nasturtiums, dozen pots	3 0	4 0
Erica, Cavendishi, per pt.	0 0	0 0	Palms, in var., each ..	2 6	21 0
" various, dozen ..	12 0	18 0	Pelargoniums, per doz. ..	6 0	12 0
Euonymus, var., dozen ..	6 0	18 0	Rhodanthe, per dozen ..	4 0	8 0
Evergreens, in var., dozen	6 0	24 0	Saxifraga pyramidalis,		
Ferns, in variety, dozen ..	4 0	18 0	per dozen	0 0	0 0
Ficus elastica, each ..	1 6	7 0	Spiræa, 12 pots	0 0	0 0
Foliage plants, var., each	2 0	10 0	Stocks, per doz.	4 0	6 0
Fuchsia, per doz.	4 0	9 0	Tropæolums, various, per		
Geraniums, Ivy, per doz.	3 0	6 0	dozen	3 0	6 0



BREEDING STOCK.

NEWSPAPER accounts of the vast quantities of meat imported into this country are enough to make a man "look to his going" in the breeding of live stock, and to hesitate before going very far in any particular direction. Probably the most successful man is he who altogether avoids extremes, keeps steadily on improving his stock, and gradually makes additions to it of sound useful animals, occasionally by purchase, but preferably by breeding, as he has always something coming on for a good market whenever it offers. Such a man pays little heed to popular cries for combination and co-operation, for he is so thoroughly imbued with the spirit of self-reliance and self-help that he prefers to fight for his own hand.

No pleasanter or more instructive sight is there in agriculture than a farm homestead with its full complement of breeding stock. Not merely for the farm work are horses kept there; brood mares predominate, because every mare is expected to rear its annual foal. The more valuable the mare the more profitable the foal, and there is no hesitation about the breeding, all risk of loss being covered by insurance, the only practical objection to thus breeding from every mare being the necessary cessation of the work of each of them before and after foaling, especially as this so frequently happens when there is a pressure of work in getting in the spring crops. The difficulty is more apparent than real when the breeding is managed with a view to profitable sales, as it ought to be. Not the sale of yearlings, but rather of horses broken to work, and kept steadily at it till a really good opportunity for sale offers. At the age of three years and upwards a sound well-bred horse is worth any sum from £40 to £100 or more, and at such prices a surplus horse or two to relieve the mares from overwork may be very well kept, the governing principle being to sell any horse for which a fair price can be had.

Fancy prices must be left out of the calculations of an ordinary farmer. There are certain home farms where such prices are given and received, but the purchase of breeding stock for such farms and the amount realised may be treated of subsequently as a higher branch of farming, wherein wealthy landlords do good work in the improvement of live stock, and the hundreds or thousands of pounds occasionally given by them for a single animal is a thing of the moment, an almost inevitable result of a contest of capitalists for the possession of the horse or beast of their fancy.

Let the tenant farmer improve his stock, too, by every means in his power, but what he wants to produce to keep him going is plenty of bullocks, which go off his hands well within the second year at prices ranging from £15 to £30 a-piece, and to do this he must breed and feed well and carefully. Home-bred stock and home-grown food are a tower of strength to him, the purchase of stock being altogether avoided except for the improvement of the herd, but some dry food may be purchased to advantage.

To the flock the first place among stock will be assigned by most farmers—certainly by all whose land will carry a flock in winter, both for the quick return it affords upon outlay, and for the economical and thorough manner in which it manures the land. Early maturity, first of all so admirably developed in Hampshire Downs, has come to be regarded as indispensable in all breeds, and even when prices were generally so low two or three years ago, drafts from well known flocks always brought special prices. At the present time lambs are selling wonderfully well, some select Suffolk ewe lambs reaching as high as 66s. 6d. each. These were an exceptionally fine lot, but plenty of lambs have realised from 40s. to 50s. each at the ordinary auction sales. In East Anglia the pure Black-faced Suffolk always commands a special price, superior to that of cross-bred sheep. But we have found much improvement follow the use of good Hampshire Down tups with good cross-bred ewes, the lambs proving hardy animals, always forward in condition under fair treatment.

It is of the utmost importance to have both male and female parents of the best, and a selection of tups should now be made for turning into the flock at the end of the month. With such an abundance of food on pastures the ewes are in excellent condition, but it will much assist early breeding to give them a daily run of an hour or two upon the corn stubbles, and they may be placed on early Turnips to clear and manure the land for winter corn.

WORK ON THE HOME FARM.

Our advice has been recently asked about the treatment of an old pasture on a clay farm, which was so infested with rushes as to be practically worthless, and we at once said, Pare the turf deeply, turning up 2 or 3 inches of soil with it, and burn the whole of it. Then bush drain it, the depth of the drains being from 20 to 30 inches—the latter depth preferably, if a sufficient fall can be had to the eye or outlet of each drain; the drains to be 15 feet apart. After the draining spread the burnt clay and ashes over the surface, and then break up the soil deeply with a steam cultivator; give it repeated turns with cultivator, drag harrow, rollers, and ploughs during the autumn, and finally throw it up in ridges with the double-breasted plough for the winter. On the first favourable opportunity next spring harrow down the ridges, and sow it with a mixture consisting of Perennial Rye Grass, Cocksfoot, Timothy, and Perennial White Clover, either with or without a crop of Oats. As the field is in the hands of a tenant farmer, he will probably take a crop of Oats, and there need be no undue exhaustion of the soil if he sows with the Oats a mixture of nitrate of soda and mineral superphosphate.

We give our advice here in detail because of the too common impression that a simple process of draining is sufficient to eradicate rushes. We have found it so in bog land, but heavy clay is quite another thing. We give preference to bush drains, because clay often settles so closely around drain pipes as to close the joints and prevent the entrance of water.

The weather though still unsettled has been more favourable for the corn, and harvest follows the tardy haymaking closely. Peas and winter Oats are reaped, and will be in stack before this note is printed, if the promise of bright sunshine with which August opens is fulfilled. Much of the Wheat too is changing fast to the yellow hue which betokens speedy maturity, and the sparrows are making sad havoc among the ears again, and yet no effort is made to eradicate these pests which cost the farmer so dear. Well may he exclaim, "There goes the rent!" as he sees a cloud of them spring from the corn upon his approach, only to return again when he is gone.

METEOROLOGICAL OBSERVATIONS.

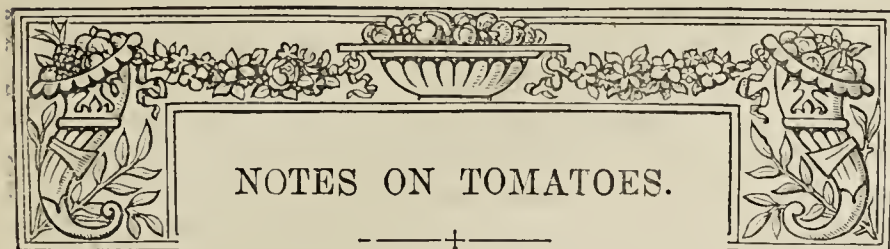
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain	
1890. July and August.		Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min.	In sun.	On grass		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.		
Sunday		27	29.991	65.0	59.0	S.W.	62.0	69.8	55.3	117.7	52.8	
Monday		28	29.855	62.8	54.2	S.	62.0	74.7	57.4	126.8	54.5	0.019
Tuesday		29	30.039	62.1	56.3	S.	62.0	72.6	47.6	117.3	45.0	0.020
Wednesday		30	29.955	61.4	57.9	S.	62.0	68.7	54.8	83.6	52.7	—
Thursday		31	29.994	66.3	63.2	S.W.	62.0	70.4	61.2	97.8	59.4	—
Friday		1	29.906	67.4	62.7	S.E.	62.3	79.0	60.8	124.6	57.9	—
Saturday		2	29.954	61.7	57.2	W.	63.3	69.1	52.1	112.9	59.3	0.063
			29.955	63.8	59.2		62.2	72.0	55.6	111.5	53.2	0.102

REMARKS.

27th.—Generally fine and bright, but slight shower about noon. [bright.
 28th.—Dull and drizzly early; short sharp shower at 9.45 A.M., then fine and generally
 29th.—Fine, but with little bright sunshine.
 30th.—Showers early; overcast day with spots of rain in the morning.
 31st.—Overcast, with occasional very slight showers.
 1st.—Frequently cloudy in morning. Hottest day this year, but max. only 79°0.
 2nd.—Generally cloudy and threatening in the morning, slight rain in afternoon, and more from 7.30 to 9 P.M.
 A generally fine week with average temperature.—G. J. SYMONS.



NOTES ON TOMATOES.

—+—

AT this time of the year everyone has some acquaintance with Tomatoes, but they are only known to the bulk of consumers through the medium of the fruiterers' shops, and in the great majority of these there is only cheap foreign fruit, which lacks the perfection of finish, colour, flavour, and ripeness, as well as beauty of shape, which we are accustomed to see and admire in English grown produce. Shop-window Tomatoes are lacking in variety. They are practically of one size, shape, and colour. We look in vain for the rich golden yellow fruit, small and large, for the delicious plum and cherry-shaped sorts, and the large clusters of the small-fruited Currant Tomato. Then there are the smooth, large-fruited varieties, differing slightly in shape and colour, which, though often seen exposed for sale, are by no means common, at least the most shapely and handsome fruits are not. To see Tomatoes in perfection they should be inspected growing on the plants in a representative collection of varieties, such as in the Royal Horticultural Society's garden at Chiswick, or in private gardens where they are well and skilfully cultivated.

The Tomato as an outdoor plant does well in the southern parts of England in seasons when the weather is hot and dry, and when proper attention is given to the plants. But it is in the United States of America that the Tomato is said to attain its highest perfection with the least trouble or special cultivation. In that sunny and specially favoured country nobody dreams of growing Tomatoes under glass. I am informed that the seed is sown in rows in the State of Illinois, like a row of Peas, the plants thinned, and stakes driven down about 8 feet apart, to which strings are attached, and the growths trained to these, or sometimes sticks are placed to the rows in the same manner as Peas, and I believe very little further trouble is taken with them. Here in England, however, whether the plants are grown outside or under glass, we find it very necessary to follow some rules of restriction of growth, for assisting the plants to flower, set their fruit, and produce good crops of finely flavoured and well-coloured shapely specimens which, I venture to say, cannot be excelled by the Americans.

There are various ways of growing Tomatoes under glass. Planting out in borders is, however, the best where plenty of head room for the extension of the stems is available. It is surprising what a shallow depth of soil, if it is made firm, the Tomato can be grown in. I have plants growing in less than 6 inches depth of soil, about 14 inches in width, bearing good crops of fruit. The soil is held up by a double row of bricks, and is placed on a hard bottom of stone, simply the surface of a stone table above the hot-water pipes. Some addition is made to the bulk of the soil in the course of the season, but no great quantity is at any time added. Where there is unlimited room for the stems to extend, as under the roof of a span or a lean-to house, more room or depth of soil may be provided. When planting on hillocks of soil, too, the depth must be regulated by the depth of the pot from which the plant is turned out. The ball of roots requires to rest on a stratum of soil about an inch in depth, and the surface of the ball should be covered with about 2 inches, all pressed firmly round. The manner of potting Tomatoes in their fruiting pots needs but little reference, as it is generally understood and conceded that sufficient soil only is necessary to induce a vigorous and sturdy start, and to carry the plants to the development of the first bunches of bloom and the

safe setting of the fruit that should follow, after which, further support is from time to time necessary. When the plants have become established and are growing freely, the necessary pruning and training commences, and requires to be followed almost daily throughout the season. On this depends to a great extent the fruitfulness of the plants. The simplest method of training is confining each plant to a single stem, which is allowed to extend without stopping until it has filled its allotted portion of space, rubbing out or breaking off all the growths that appear in the axils of the leaves, paying particular attention to shoots which start and are liable to grow very vigorously near the leading points of the plants. A few days' inattention to this matter often necessitates surplus growth having to be cut away with the knife, instead of being rubbed off with the finger and thumb, or broken away when in a brittle condition. These little matters are worth attending to regularly, because of the ease with which they are accomplished at the proper time, and the consequent benefit to the plants.

It is not absolutely necessary in all cases to confine a plant to one stem only, though in the case of pot plants grown perpendicularly to a stake it is the best method. Under a roof two or three stems may be allowed to grow, but in the case of each stem the same attention to the timely removal of the side shoots is requisite. More fruit is often obtained in this way, but the largest and finest specimens are, as a rule, obtained from single-stemmed plants. When more than two or three stems are allowed the grower may be said to have adopted the extension system, and by this method he can manage with fewer plants. This is a very good way of growing a spring crop of the small fruited sorts. They do not require such high feeding as the others, and plants of these sooner recover from the weak and spindly condition which Tomatoes preserved through the winter and planted early in a warm position, but often a long way from the glass, frequently assume. A good breadth of extension-trained plants will give early fruit and continue a succession of flowering, setting, swelling, and ripening fruit throughout the summer, but the most constant and best attention must be given to them.

During the period of flowering plenty of air is necessary to enable the plants to develop perfect floral organs, which the best varieties invariably do, with the exception of sometimes producing a central fasciated or deformed flower. This is best removed, particularly when the fruits are wanted for exhibition purposes, as to allow it to set and develop only results in an unshapely fruit. The pollen is distributed on sunny days about noon by lightly shaking the truss of bloom or tapping the stems of the plants, and some growers syringe the plants lightly to effect the same object. It is surprising how long the fertilised blooms sometimes are in swelling the young fruit, but generally the first bunches swell rapidly, and then it may often be noticed that further bunches refuse to swell. When this is the case it is a certain sign that more support to the roots is needed, and until that is given the fruit, or rather the young bunches of embryonic fruit, will remain at a standstill, the limited amount of support the plant had at command having been utilised by the first formed bunches. At this stage there is nothing to equal a top-dressing of turfy loam and manure in which is also mixed a little soot and bonemeal, and placed on the surface when the soil is moist. It will soon attract a multitude of white fibres, the effect of which is to give a fresh impetus to the forces of the plants, and which will soon be made apparent by the enlargement of the fruit. As the rootlets extend and multiply more water will be needed, and also weak supplies of clear soot water or other liquid manure. Fresh top-dressings of the same materials may be applied with advantage from time to time as they are seen to be necessary, and in this way, together with applications of liquid and artificial manure, the plants are strengthened and good crops of fine fruit secured. I find that when planted out on hillocks of soil top-dressing is not

needed so soon, but it may depend on whether the plants are enabled to root in the subsoil below them. Care should be taken that such subsoil is of a hard nature, because if loose the prospect of fruit may be jeopardised, as the plants will have a tendency to produce long roots and large sappy stems and foliage.

The Tomato is not without enemies, and those, too, of a serious nature. Disease often works serious mischief and devastates plants wholesale when once it gains a foothold. A fungoid disease attacks the foliage and stems, and is known by the name of *Cladysporium*. As I had some experience of the ravages of this fungus a year or two back it may be interesting to give a sketch of its progress through a house of plants. My plants were attacked in the month of June, the first symptom being a small light coloured spot, which soon became a dark brown colour, and spread rapidly over the leaves, and eventually the stems. The fruit was not affected by it, but when the disease had attained a firm hold of the plants no further progress in setting fruit was possible, as the fungus absorbed all the sap. It spread its invisible mycelium in the tissues of the leaves, from which it developed slender erect filaments bearing on the tip of each the fully developed and seed-bearing spores, which when ripe and massed together presented to the unassisted eye the appearance of dark masses of brown dust, the least disturbance of air being sufficient to distribute millions. The leaves soon shrivelled and became useless until all had to be cut away, leaving only bare stems with the fruit in various stages. The first and worst attack of the disease was in 1887, followed by a less virulent one the next year, and less still in 1889. This year I have not observed it, but my treatment of the plants has been different. The disease is said to be due to atmospheric influences, and there can be no doubt that the rapid spread of the fungus may be arrested by a dry and warm atmosphere. The fungus in my case was no doubt invited by a damp and cold atmosphere during the early period of growth, when the plants were soft and no fire heat was afforded. It is at this stage and under these conditions that the fungus was able to obtain a foothold, its spread being afterwards easy, especially when the conditions it delights in continue. The probability is that had fire heat not been discontinued so soon in the season the plants would have grown sturdier and have had firmer and stronger foliage better able to resist the attacks of the fungus. I am strengthened in this idea because this year, having provided a little fire heat, particularly at night, until the beginning of July, I have not been troubled with any sign of disease, and the plants are growing well and setting fruit abundantly.

There is only one insect pest that is troublesome to the Tomato, and that is the white fly. Fumigation will destroy it, but I am trying to keep it down by the aid of the syringe, and have succeeded to a great extent. This necessitates syringing the plants, a practice which some recommend and others object to. I find the plants are not injured by syringing when it is done early enough in the day to allow of the foliage becoming dry, or nearly so, before night. Syringing should be performed either early in the morning or in the afternoon, moderately cloudy and breezy weather being the best for the purpose, because then evaporation takes place more quickly than it does in dull "muggy" weather. Soapy water may be used sometimes, but not when the sun has any power on the plants. Plenty of ventilation is at all times needed by Tomatoes, and a moderate amount should be left on the house at night. A moist, warm, insufficiently ventilated house tends to cause the fruit to crack, and certainly provides the necessary conditions for an attack of the fungoid disease.

There are numerous varieties of Tomatoes now, all claiming to be good. One of the best among the red fruited, smooth, Apple-shaped sorts is Hathaway's Excelsior. It is a free setter, and produces good bunches of fruit, which ripen to a deep red colour. Vick's Criterion is very useful, producing good bunches of egg-shaped fruits. Dedham Favourite produces large and handsome fruit. Sutton's Earliest of All is an excellent partly corrugated

variety, a moderately dwarf grower, and gives beautiful light scarlet fruit, somewhat flat and round. Hackwood Park Prolific is capable of producing some very heavy bunches, is a strong grower, but is, according to a limited experience of it, not the best of setters. The Mikado is a very distinct variety, both in the foliage and the colour of the fruit, but after setting one good bunch of fruit I find it difficult to induce it to set many more. The colour of the fruit is brick red, and the flavour and quality are not first-class. It is by no means equal to the previously mentioned varieties. Among the smaller fruited varieties, Nisbet's Victoria is one of the best. Almost every bloom appears to set well, and the fruits grow to the size of a Victoria Plum in very prolific clusters. The best of the yellow varieties I have grown is Carter's Blenheim Orange, an exceedingly good variety. Each well-ripened fruit is streaked with marks of rich red, which gives it a very attractive appearance. It is good in every respect. Next to the above is Green Gage, which produces light yellow fruit of medium size. The Perfection type of Tomatoes are among the best, and there are some recently introduced sorts, such as Ham Green Favourite and others, which are said to be very good, but which I have not yet tried.—E. D. S.

WINTER SPINACH.

THIS is a far more important crop than many gardeners seem to be aware of. There may be establishments where there is little or no demand for it, but as far as my experience goes it is almost impossible to grow too much. During the winter it ranks as a choice vegetable, and does excellent service as such, and there can be no question about its wholesomeness or medicinal properties. Spinach Beet is sometimes grown as a substitute for it, though unfortunately this exceptionally hardy and easily grown vegetable is by no means equal to the genuine article, and some cooks will not even try to do anything with it. Winter Spinach is not generally of easy culture; in fact there are many more failures than successes with it. Those with a somewhat limited area of ground have the greatest difficulty with it, simply because they are or fancy they are unable to devote a good space to the crop. Not only ought a comparatively large piece of ground be given up to Winter Spinach, but this should be prepared at least two months in advance of sowing time. Our practice is to manure and roughly dig a breadth of rather high ground newly cleared of Broccoli, and a second turning is given during the summer. This has the effect of sweetening and well pulverising the soil, and what also is of great importance, gets rid of the greater portion of the natural enemy to the crop—viz., the grubs of the Spinach moth. Soot and lime freely stirred into the surface act as a deterrent of the grub, and also tend to promote a stronger growth.

Early Potatoes are an excellent preparation for Spinach, these leaving the ground in a sweet porous condition, and it ought to be possible in most gardens to sow it in close succession to them. It is advisable to sow a considerable breadth of ground with this crop even if the demand is successive, for the simple reason that when there are only a few short rows these are kept far too closely gathered from, even if only drawn from once a week, as it must be remembered that growth is very slow in the colder months of the year. When to sow the seed is another consideration, more depending upon this than is apparent to the careless observer. In our case if sown before August premature bolting usually results, while, on the other hand, if the sowing is deferred till late in August the plants do not attain a serviceable size before the following spring. It is the happy medium that best meets our case, and if the seed is sown during the second week in August failure rarely occurs, the plants continuing to yield good gatherings of leaves till the earliest spring sown is available. This answers our purpose far better than making two or three sowings, extending from the latter part of July till the early days of September. The ground being stirred to a good depth and finely divided, this sometimes necessitating the use of heavy hoes, shallow drills are drawn 15 inches apart, and if at all dry these are moistened prior to sowing the seed. It is unwise to sow sound seed very thickly, but as there are slugs and grubs to contend with many more seeds than of plants required are sown. If all goes on well the seedlings are early and lightly thinned out, soot and lime being frequently dusted over them if the weather favours the slugs in their depredations. Before the plants become crowded they are further reduced to about 3 inches apart, and in the course of a few days they are large enough for transplanting with a trowel in order to make good any blanks. In

thus moving them care has to be taken to preserve the tap root as much as possible, and to keep a little soil about them, as Spinach transplants rather badly. When there is no need for resorting to transplanting, about half the plants are, when of good size, drawn for use, a distance of 6 inches apart being ample for those reserved. Frequently stirring between the rows is absolutely necessary; this, in addition to promoting a stronger growth of the plants, also keeping slugs from increasing and grubs from being so plentiful and destructive. Many err in placing their rows too closely together, this rendering it almost out of the question to surface hoe occasionally. Winter Spinach is perfectly hardy, any attempt to protect it usually doing more harm than good.

The Winter or Prickly-seeded Spinach is the variety most generally sown at this time of year, but as a matter of fact it is not any hardier or better adapted for the winter crops than the summer or round-seeded form. Neither of them is equal to the Victoria and Monstrous Viroflay, and either of those ought to be sown in preference to the older and much smaller leaved varieties. One leaf of the Victoria is equal to two of the smaller forms, and it is a free-growing perfectly hardy Spinach.—W. IGGULDEN.

LEICESTER CONFERENCE PAPER. FRUITS FOR LEICESTERSHIRE.

By Mr. WILLIAM INGRAM, Belvoir.

I APPREHEND that the object of the visit of the British Fruit Growers' Association to Leicester is twofold; in the first place to elicit information on fruit growing as it is locally practised, and the second to communicate facts on the same subject, which the extended practical experience of the members of the Society enable them to do.

Fruit trees, like other living objects in Nature, are liable to be constitutionally affected in growth and fertility by circumstances of soil, climate, latitude, elevation, and other natural causes, and as this England of ours presents in a limited space greater climatic conditions and diversity in its geological character, and therefore soil, than any other portions of Europe, it follows that to have anything like an assurance of success in fruit growing we must know the conditions of soil that exist, and the varieties of trees that have shown by their vigour, fertility, and duration the mutual adaptability that is requisite between Nature inert and vital.

Pursuing the idea that certain physical conditions are important factors, and so necessary to be considered in the cultivation of fruit trees, it may be interesting to those of our visitors unacquainted with Leicestershire to mention a few salient features in the geology of the county, and one very remarkable one is seen in the range of hills that rise north of the town, and constitute the Charnwood district. This mountain range, for such it really is, attains an elevation of a little over 900 feet, and the rocks of which it is composed, consisting of granite, syenite, slate, and sandstone, are of considerable economic value. I mention the occurrence of this interesting range because in the long period of time since its obtrusion, its waste by atmospheric causes has been considerable, and the *débris* of these hard rocks has usefully modified some of our heavy soil, and apart from the slow operations of Nature, we have in the active working of the granite quarries great resources of dust and pulverised granite rich in feldspar, which both in fertilising action and in keeping the soil open is of especial value.

A general glance at the geological map of the county of Leicester, and very little consideration of the circumstances it reveals, will be sufficient to convey the fact that it does not enjoy any special natural advantages that would constitute it a fruit growing county. It certainly does not possess the recommendations either of climate or the conditions of soil that distinguish districts pre-eminent for fruit growing like Kent or Hertfordshire, situated in the centre of England, and having a general elevation of from 300 to 500 feet above sea level over the greater part of it (the exception on altitude being the Charnwood range which I have already described), it may be inferred from the rocky character of its more elevated parts, and its general altitude, that its climate is less genial than from its latitude alone we might be led to expect. Elevation, a great extent of cold clay land and marls, both of the trias and lias, also conduce to bring about this result. Whilst I have freely commented on the physical disadvantages of the county, I may with the same degree of freedom mention the favourable circumstances resulting from the climate and soil that belongs to it. Its general cool climate has the effect of retarding the blooming of fruit trees, and this is an advantage appreciated by the practical man, when, as the great churchman who died at Leicester Abbey said, "The third day comes a frost, a

killing frost." We often hear of the destruction of the fruit-blossoms in the south-eastern counties when we are safe from the same calamity through the undeveloped condition of the buds. Although the river system of the county is of a somewhat restricted character, and there are not found the extensive valleys possessing rich river deposits such as are found contiguous to the Thames, the Trent, and the Lea, yet the materials from which these loams were derived exist in abundance, but in a concentrated form. Our granites, limes, gypsum, ironstone, and sandstone as they have been in the past so they remain still, a rich storehouse of mineral matters available for distribution by man's agency, or the slower but inevitable operations of Nature in her system of soil making. As illustrating this opinion of the innate capabilities of the land of Leicestershire, I may say that whenever fruit growing has been taken in hand and pursued with knowledge and intelligence, a considerable amount of success has been achieved. The Grapes grown by Mr. Henderson of Cole Orton had a name and a fame throughout the land. Beau Manor, shadowed by the cold rocks of Charnwood, in the skilful hands of Mr. Hamsher, has furnished fruit of great excellence. Gopsall and other places have also afforded instances to substantiate my argument, and orchards well placed and managed have suggested, rather than exhibited, what may be done in this county.

I must in this short paper deal rather in general principles than in details of culture. The influence of soils on the health of trees is pretty well, if not understood, certainly acknowledged. An unhealthy tree is at once the subject for the attacks of insects. Good cultivation, by promoting vigour, enables a tree to overcome its enemies. In a deep fertile soil, or a situation naturally adapted to the habits of fruit trees, vitality is increased and vegetable existence is prolonged. Showing how important healthy foliage is in aiding the fruitful development of the bud we have the example of the late and the present season. The blighted condition of the trees last and the preceding year was so marked that it invited discussion, and numerous remedies were suggested and tried. It is now sufficiently evident to us that the unfruitfulness of the present season is largely due to the injury sustained by the foliage of the trees last year, for no frost of sufficient severity occurred to destroy Apple, Pear, and Plum blossom. This experience suggests the importance of maintaining the foliage of a tree in health and vigour.

The two very important matters which will I hope be considered and discussed at this meeting are drainage and shelter. In a county like this it is extremely difficult to lay down any rule for the former, but stagnant water should not be allowed to exist below an orchard. Shelter is all-important. We seem to be particularly exposed to the action of high winds. The question of belts of trees and of the sorts to be employed is also worth consideration.

The selection of suitable Apples, Pears, and Plums for private gardens, as well as those cultivated exclusively for profit, is a subject that demands practical local knowledge and considerations. Those who grow for home consumption must naturally select the kinds likely to afford a supply of fruit in succession from an early to a late period; while the grower for profit will confine himself to a few well-known prolific kinds, to come in early and late, so as not to be in competition with American importations. I have prepared a list of Apples, Pears, and Plums, which I submit to the Conference.

APPLES

(Forming part of the collection grown at Belvoir and named as meritorious).

Kitchen.

Bramley's Seedling.	Sturmer Pippin, D. and K.
Frogmore Prolific.	Rosemary Russet.
Lord Suffield.	Reinette de Canada.
Stirling Castle.	Mère de Ménage.
Lane's Prince Albert (there are trees at least fifty years old at Belvoir).	Hawthornden.
Lincoln Pippin (good variety for jelly, handsome bloom).	Russian.
Warner's King (great bearer).	Domino.
Flower of Kent.	Wellington.
Golden Noble.	Northern Greening.
Jefferson.	Peasgood's Nonesuch.
	Bess Pool.
	Duchess of Oldenburg.

Dessert.

King of the Pippins.	Blenheim Orange.
Cox's Orange Pippin.	Herefordshire Pearmain.
Margil.	Old Golden Pippin.
Early Red Apple.	

GOOD PEARS GROWN AT BELVOIR.

Doyenné d'Été
Jargonelle
Doyenné Boussoch
Williams' Bon Chrétien
Bergamotte d'Automne
Beurré d'Amanlis
Beurré Superfin
Marie Louise
British Queen
Doyenné du Comice
Beurré d'Arenberg
Beurré d'Anjou
Soldat d'Esperen

Bergamotte Esperen
Easter Beurré
Josephine de Malines
Knight's Monarch
Beurré Rance
Beurré du Buisson
Olivier de Serres
Winter Nélis
Beurré Hardy
Beurré Diel
Huyshe's Victoria
Huyshe's Bergamot

PLUMS.

Angelina Burdett
Rivers' Early Prolific
Kirke's
Jefferson
Green Gage
Reine Claude de Bavay
Purple Gage
Early Orleans

Coe's Golden Drop
Yellow Magnum Bonum
Impératrice
Victoria
Prince Englebert
Pond's Seedling
Wine Sour

GOOSEBERRIES.

Red.
Crown Bob
Ironmonger
Red Champagne
Warrington
Whinham's Industry

Yellow.
Golden Drop
Yellow Rough
Green.
Greengage
Rosebery

CURRANTS.

Raby Castle
New Dutch
Red Grape
White Dutch

White Transparent
Black Baldwin
Black Naples
Black Lee's Prolific

RASPBERRIES.

Carter's Prolific

Antwerp Red

The following selection has been supplied to me by Mr. Thomas Warner of Leicester :—

APPLES.

Blenheim Orange.—Does only fairly well, and never gets equal to south or south-western grown fruit.

Bess Pool.—A very good late Apple, but a shy bearer for the first twenty years after planting, after which it bears well every other year.

Bramley's Seedling.—This is a very good winter Apple, and bears well as a young tree.

Annie Elizabeth.—A handsome Apple, but of only second rate quality.

Calldwell.—One of the best late cooking Apples, very hardy.

Keswick Codlin.—One of the best early cookers.

Cox's Orange Pippin.—Early and free bearer, first-rate quality, and very good keeper.

Duchess of Oldenburg.—The best early cooking Apple I know, a splendid grower, and fruits regularly.

Dumelow's Seedling.—One of the best late cookers; free grower and good bearer.

Greenup's Pippin.—Handsome, good bearer and free grower; the best Apple for making jelly; always commands a good price in the market.

Early Red Margaret.—A very good early dessert Apple.

Joaneting.—Poor quality, but fruits and sells well; a decidedly profitable Apple.

King of the Pippins.—Good in every way.

Lane's Prince Albert.—Very good, free grower and bearer.

Lord Suffield.—A bad grower but very fine fruit.

Northern Greening.—A splendid late cooking variety.

Devonshire Quarrenden.—Very good, free bearer.

Ribston Pippin.—Too good to be left out, but, in my opinion, for this locality, superseded by Cox's Orange Pippin.

Sturmer Pippin.—A valuable late Apple, good keeper; tree very hardy, and good bearer.

Warner's King.—Very large, free grower, and good bearer.

Warner's Seedling.—First rate quality, free grower, good and certain bearer.

PEARS.

Beurré d'Amanlis.—Good bearer and first quality.

Beurré de Capiaumont.—Good bearer, fair quality.

Easter Beurré.—A very good late variety.

Beurré Rance.—The best late Pear known. I ate them from standard trees the last week in May.

Bon Chrétien.—One of the best market Pears.

Hessle.—One of the best market Pears.

Doyenné du Comice.—Very good. Equal in flavour to any Pear I ever tasted. Grows well as a standard.

Jargonelle.—Very good.

Louise Bonne of Jersey.—Good; free bearer.

Beurré Diel.—Good market Pear; second quality.

Marie Louise.—Splendid, but an uncertain bearer.

PLUMS.

Bleeker's Searlet.—Free bearer; good.

Damson Shropshire.—Free bearer; very good variety.

Diamond.—Fine cooking variety.

Early Prolific.—Free bearer; good, but rather too small.

Coe's Golden Drop.—One of the best varieties grown.

Early Orleans.—Good; free bearer.

Prinee Englebert.—Good; free bearer.

Reine Claude de Bavay.—Great bearer, good quality; the best of the late Gages.

Syston.—Good bearer, poor quality, but a very profitable market variety.

Victoria.—The best bearer, good grower, and profitable as a market Plum.

CHERRIES.

May Duke.
Bigarreau.

White Heart.
Morello.

In making out this list, Mr. Warner adds, I have confined myself to trees I know do well as standards. Of course there are many more varieties worth growing, especially for dessert purposes, which I have not named; but I think those I have enumerated all do well in Leicestershire, and are good profitable sorts.



CYPRIPEDIUM GODEFROYÆ.

THERE is a wide variation in the foliage of this species, some plants being much darker than others. The flowers also vary considerably. Plants with dark foliage have slightly larger flowers than those with lighter leaves, but the upper sepal is not so beautifully spotted in the former as the latter, yet there are more spots on the back of the sepal than in the lighter foliated form. The other portions of the flower are very similar. This plant thrives in well-drained pots in a mixture of peat and moss, with a little charcoal added. It delights in a warm moist atmosphere, where it is well shaded from the sun.

CATTLEYA GASKELLIANA.

The various forms of this Cattleya make an attractive display just now, and are very effective in a shady position in the conservatory, grouped with Ferns. When used in this position be careful not to place them where cold draughts will strike upon them. These plants are not damaged in the least by being placed in rooms for a few days. The flowers last perfectly fresh much longer in the cooler and drier atmosphere of the conservatory than in the Orchid house, where blocks and baskets have to be syringed, and a moist atmosphere maintained to suit mixed collections of plants.

CATTLEYA ELDORADO.

Where room is limited the numerous forms of this Orchid will be found to do better suspended from the roof in ordinary pots than when standing on the stage. It requires a warm moist atmosphere and plenty of water during the season of growth. The last plants with us have flowered, and they will be arranged at the lightest but coolest end of the structure, to thoroughly develop and mature the young pseudo-bulbs on which the flowers have been produced.

LÆLIA PURPURATA.

Plants of this useful Orchid should be starting strongly into growth. Where they are fairly started place them at the coolest end of the Cattleya house, and top-dress them with living sphagnum and peat. If they need larger pots repot them at once. If the compost is in good condition do not disturb the roots, but break the pots, and any portions that cling to the roots should be placed

with them into the fresh pots. If the plants are unduly disturbed at their roots, such as is necessary when the whole of the old compost needs removal, they are certain to assume a sickly appearance. If repotted carefully they will grow without a check. The main body of the compost should consist of peat fibre used in lumps, and charcoal, with a little living sphagnum on the surface.

LÆLIA ANCEPS.

Weak pieces of the various forms of this Orchid are longer growing into a flowering condition than is the case with many species. Beginners would do well to start with good healthy pieces when their culture is comparatively easy, provided they do not place too much material about the roots and overwater them. Plants with strong pseudo-bulbs will show flower spikes with their new growths. Watch for slugs, which are particularly fond of them, and aphides, if any exist in the house, are certain to establish themselves upon the plants. The best method of eradication we have found is to lift the plant down and place a soft cloth round it, and then tap the plant sharply over a shallow vessel containing a weak solution of tobacco water. Any insects resting on the cloth can then be conveyed outside; sponge the growths afterwards with tobacco water.

DENDROBIUM BRYMERIANUM.

The pseudo-bulbs have finished lengthening out, and the plants should now be arranged at the coolest and lightest end of the structure to thoroughly ripen them. During the whole of the season these plants have given trouble by the attacks of a small yellow aphid. Lifting the plants down carefully, and dipping them in a weak solution of tobacco water, has been effective in destroying them. *D. crassinode* is turning yellow, and will be gradually exposed to full sunshine. The plants are being hardened, and will then be placed in a moderately cool house, where they can enjoy a good circulation of air, but will not be suspended nearer the glass than 2 feet. This species, during the process of ripening, will bear fully double the sunshine of *D. Wardianum*, *D. primulinum*, and others.

ORCHID PANS.

Some of the "patent" fancy pans that have been introduced during recent years, and said not to go green, are ten times more trouble to wash than ordinary pans and pots; in fact, they cannot be washed clean. Plain pans and pots burnt hard are the best; they are a long time before they turn green, and if not neglected are easily washed clean. Those full of various shaped holes and fancy markings on the outside cannot be washed clean, and even if the outsides are clean the holes and crocks which show through have a filthy appearance.—ORCHID GROWER.

WATERING.

WHERE there is an abundant water supply, with means for distributing it quickly where wanted, at no season of the year will it be found of greater usefulness than at present. Assuming that last winter was dry, and in most districts it was, and that all the rain that has since fallen has been sufficient merely for the wants of the moment, those who are in a position to apply water abundantly and cheaply should not hesitate to soak any such crops as Peas coming into bearing, Cauliflowers, Vegetable Marrows, Celery, Parsley—especially where maggot-eaten—and all such young crops as Spinach, Lettuces, Endives, and Cabbages for autumn use. Fruit trees on south exposures, such as Apricots bearing heavy crops, will be greatly helped if well watered. So will Peaches, and also young Apple trees bearing crops. Plums and Pears, which are generally wanting in fruit, will perhaps be as well without water, but over-dryness, even in such cases, is inimical to the next season's crop.

Among flowers, Carnations are greatly helped by a good soaking in dry weather; the blooms come larger, last longer, and the supply is longer continued. Gladioli, Dahlias, Phloxes, Pentstemons, Calceolarias, Lobelias, Begonias, and Chrysanthemums are other flowers which should be well supplied with water. Marguerites, Pelargoniums, Sunflowers, and Marigolds are examples of those which may be passed.

Grape Vines at this season are not uncommonly allowed to suffer on account of a stinted supply of water at the roots, and the same remark might well be applied to Peaches grown under glass. Weekly waterings are not too often for either, at least until the middle of September is past. There is no better method of keeping the trees and Vines in a clean healthy condition, and of obtaining well coloured fruit, with, of course, the unstinted ventilation which can be given at the present season.

All plants intended for winter flowering, such as Bouvardias, Pelargoniums, Chrysanthemums, and foliage plants, such as Crotons, Dracenas, &c., will also take large quantities of water with continued surfacings of manure. We have also begun to surface dress with soil Chrysanthemums which have shown signs of exhaustion. It is quite possible we may have some weeks of weather too dry for the wants of

the trees and plants mentioned above, and the application of water will be found to be of the greatest possible advantage.

When cold nights begin and much rain falls watering must cease in most cases, and indeed it is sometimes advisable to allow things to become rather dry about the end of September in order to help to secure a more profuse crop of flowers, &c., later in autumn. Just now, however, plenty of water is in demand.—B.

OLEARIAS.

OVER eighty species of the genus *Olearia*, one of the numerous groups of Compositæ, are known to botanists, but scarcely a dozen are found in gardens, and still less are generally valued for their ornamental characters. Two of the best known are *Olearia*, or *Eurybia*, *Gunniana*, and *O. Haasti*, both with abundant white flower heads of shrubby habit,



FIG. 18.—OLEARIA STELLULARIA.

and hardy in many districts, the former, from Tasmania, requiring protection in exposed positions, and being rather more tender than the New Zealand *O. Haasti*. When in flower these shrubs are exceedingly ornamental and form conspicuous objects on a rockery or in a border. Another *Olearia*, *O. stellularia*, was shown from Kew at a meeting of the Royal Horticultural Society on April 8th this year, and a spray of this form depicted in fig. 18 gives a good idea of its character. The flowers are starry in form, white, clustered towards the joints of the branches, the leaves small and closely set on the stems. The majority of the *Olearias* are natives of Australia, and the others are distributed through New Zealand and Tasmania.

PEAS.

THIS year has been very favourable to Peas, and having given a fair trial to several new varieties, perhaps your readers may like to know the results. Sharpe's First Early, Laxton's Earliest of All, Early William, No. 1, and Alpha composed the first batch. Earliest of All, sown ten days to a fortnight after Sharpe's First Early, beat the latter by just

three days. Where earliness is everything this Pea will be useful, but commend me to Early William. This is a great improvement upon William I., being so much dwarfer, not being more than 3 feet high; whereas William I. is apt to run considerably over 4 feet. The Early William is also very uniform in appearance, whereas I always found William I. vary very much in pods and growth. Laxton's Charmer followed; and in this we have indeed a grand acquisition. It is supposed to be from 4 feet to 5 feet high, but this year it has not stopped short at 6 feet. The pods are an intense green, and they hang in profusion the whole length of the bine. The peas are bright green and closely packed to the number of from nine to twelve in a narrow curved pod. This is an immense cropper and a poor man's Pea in all respects, there being little bulk of pod and plenty of peas. The quality also is all that can be desired. Boston Hero, on the other hand, is all pod and no peas, and not worth growing. Autocrat is a splendid Pea, a good cropper, with pods of an intense green, carrying a very heavy bloom. The peas quickly form, so that even when the pods are thin they shell out satisfactorily. The quality is good, and I can strongly recommend it. It would also be useful for exhibition. Sharpe's Queen is another good Pea, the pods being longer than those of Autocrat, but hardly of such good colour. It is of first-rate quality and a good cropper. I found it satisfactory in every respect, and it is not one of the hollow-pod monstrosities. Bliss's Everbearing was kindly sent me by Messrs. Henderson of New York, and it is a useful Pea, 2 feet high, with short thick pods filled with unusually large peas of good quality. Sharpe's Triumph, an old favourite of mine, did not turn out so well as usual, but Prince of Wales is just the Pea to have when you want to keep picking, for it is a grand cropper. This, also, is all peas and little pod. It is so well known that I need add nothing, but it so happened that I had never grown it before.

Since writing the above I have been much astonished to see that Boston Hero has obtained a first-class certificate. I enclose you a few pods of this Pea for your opinion. These are a fair sample, for I have had none better, and they will confirm. I think, my opinion of the Pea. I also send a few pods of Laxton's Charmer, but as they are now old you will not have such a good opportunity of judging the merit of this really first-class Pea.—H. S. EASTY.

[The specimens received are as our correspondent represents them. The pods of Boston Hero are very large, but not half filled; the pods of Charmer are crowded with peas.]

GARDEN NOTES IN 1889.

ALPINE AND HERBACEOUS PLANTS.

WHEN Queen Rosa holds her court all other things seem to fall into the background, comparatively speaking at least; and as from the end of June until the middle of July festivals in her honour are continually held, and I hold a somewhat responsible position in her court, and have to wait on her royal progress, and not only so, but to tell others about those festivals, it is no wonder that other matters connected with the garden are apparently neglected. During the time indicated many things have claimed my attention, but writing about anything else but Roses was impossible. Visions of Mr. Pemberton's or Mr. Lindsell's H.P.'s., Mr. Burnside's, or that noble army of East Anglian parsons, Teas would flit before me and hide everything else from sight. But now there is breathing time. Boxes are put away, shades and Zulu hats have disappeared from the gardens, reputations have been lost and won, one can think and write about other subjects, and I resume my notes on some of the herbaceous plants that gave me so much pleasure during last summer.

When the full blush of the early spring flowers is over, when most bulbs have died down or are rapidly doing so, there are still a few of them to interest and add vivid colouring to the garden. For this I know nothing better than the too much overlooked sections of Tulips. The Parrot varieties, quaint in form and gorgeous in colouring, with the tall brilliant flowers of Gesneriana or Duchesse de Palma, told very well for lighting up the masses of green plants, which were only just beginning to send up their flowering stems. There is another Tulip which, although exceedingly quaint, is also telling for its colouring, cornuta, and a small patch of this was noticeable at some distance. It is at that time, too, that I have found the Hyacinth so valuable for giving colour and perfume to the garden, and at so very little trouble or expense. All who grow Hyacinths in pots, it is well known, find it necessary to procure fresh bulbs each year, and the question comes, What is to be done with the old bulbs? Throw them away, say most people. It is indeed nearly useless to try to grow them successfully in pots the second year, but their capabilities for garden work were forcibly impressed upon me some years ago by seeing a very beautiful bed of them at Canterbury in an amateur's small garden in Dane John, which was entirely kept up by bulbs which had been grown in pots, and instead of being turned out had been carefully dried off, stored away, and planted. I have been in the habit for some years of taking care of my bulbs and planting them out, so that in all parts of the garden I have clumps of flowering roots, which, in their varied hues, planted without any regard to arrangement, brighten up the borders. I might, possibly, were I to take them up, take away the small bulbs and replant the larger, have finer spikes of bloom, but I prefer leaving them as they are. There is one clump in my Rose border which is the produce of one bulb, and I had this year fourteen very fine spikes on it.

On the rockery at the same time many things claim attention. There are little patches of *Gentiana verna* and *G. acaulis*, the former the most lovely of all blue flowers I think, yet often baffling the efforts of cultivators, as it has often puzzled myself. I have it now on a northerly aspect, and have allowed *Arenaria balearica* and *Mentha suaveolens* to form a sort of carpet for it to grow upon, as I have seen it on Alpine pastures, although we cannot imitate the Alpine winter which keeps them warm and dry. Then there are masses of *Aubrietia*, gay with their profusion of bloom, especially the variety I claim as a reminiscence of a pleasant visit to Belvoir many years ago. It is, however, eclipsed in beauty by the very remarkable variety which we owe to Mr. Max Leichtlin, and named after him. It is interesting as having a decided tint of crimson in it, quite distinct from the prevailing colour of the family—lilac; and it is possible that it may be the precursor of other and still more brilliant forms, but it is in itself a most lovely plant, and in large masses will be most effective. Then, too, some of the *Androsaces* are showing their pretty flowers, some of them, like *carnea*, difficult to grow; at least I rarely find it doing well with "herbaceous men." You can grow it in pots, but I confess to not having much regard for Alpines which require to be thus treated, although my dream—a dream not to be realised—is that of a well constructed rockery under glass, where all the spring gems could be cultivated, and the lights taken off during summer. In such a place, we might be able to grow these plants to perfection. Some of them, such as *A. sarmentosa*, grow freely, and there is one, *A. villosa*, which is very free in flowering, and which also retains its flowers in beauty for a considerable time.

And is there a prettier flower on the rockery than the delightful dwarf Pink, *Dianthus alpinus*? Its large (1½ inch across) flowers, lying close down on its dwarf foliage, which they completely cover, make it an object of beauty not easily eclipsed. Our native and well-known Cheddar Pink, *D. cæsius*, flowered also very well with me; but pretty and sweet although it is, it cannot equal its Alpine sister in beauty. There are other kinds which I grow, and which flower about the same time—*D. fragrans* and *D. neglectus*—but I do not think that any of them equal the Alpines. I have had *D. Atkinsoni* very brilliant in colour, but evidently a biennial. I have had it several times, but after it has flowered it has disappeared. And what glowing masses of colour are made by the dwarf early Phloxes. I had some grand clumps of them this spring when, in conjunction with *Iberis corifolia* and *Aubrietia Ingrami*, they made that part of the rockery most attractive. I have never quite unravelled their nomenclature, but have them under the names of *setacea*, *purpurea*, and *Nelsoni*, and no more satisfactory plants can be placed on the rockery.

In the herbaceous border, that most beautiful and interesting class of plants, to which such great additions have been made of late years, the *Aquilegias* next begin to assume their beauty and to delight us with their varied forms. The old common Columbine of our cottage gardens is not to be despised, and this is especially to be said of the white form, which is very fine and makes a conspicuous object in the garden, but the newer varieties claim our attention especially. They are all easy of cultivation with the exception of one or two, and where a number of them are planted together the agency of bees and moths will be sufficient to produce any number of varieties; indeed this is one difficulty in their cultivation, that it is almost impossible to keep them true, and often have I been disappointed when I had taken, as I supposed, the greatest care in isolating a plant from which to save seed, to have found when the seedlings came up that they were of a very mixed character. There is one species with which I have failed, *Aquilegia glandulosa*. I had plants of it from many quarters, including Grigors of Forbes, but after a year or so they departed. Can it be that this is a biennial? The species which have given most of the many varieties that abound in every garden where such plants are cultivated are *cœrulea*, *chrysantha*, *canadense*, and *Skinneri*. *A. cœrulescens* is a dwarf growing species, very beautiful in the colour of its flowers and large in size; it is earlier than most of the others, and my plants this year were very strong and healthy. *A. chrysantha* is, I think, the finest of all; its brilliant yellow flowers, its long spurs and stately growth, combine to make it a very beautiful plant. *A. californica* or *canadense* is scarlet and yellow, and it will be readily seen what capabilities there are for variation where these colours get intermixed. I wish it were possible for me in my small garden to give them more space than I do. I have a border some 12 feet long by 3 wide planted with them; there they are free to seed as they like, and the result has been a wonderfully beautiful set of seedlings of the most varied tints and habits. Most of them, indeed, are tall, partaking of the habit of *A. chrysantha*. This, by-the-by, is the easiest to keep true; it blooms until late in the season, when the other kinds are all past, and if some of the later flowers be reserved for seed purposes the plants raised from them will be pretty sure to come true.

Inula glandulosa is a plant whose praises I have more than once sounded in the Journal. It was very beautiful with me last year, the fine weather suiting it and many other herbaceous plants admirably. The plant is about 18 inches high. The flowers rise up to about 2½ feet. They are of a very rich yellow, the florets hanging down like golden tassels. The plant is very easy of cultivation, and can be readily increased by division of the roots. It is a good thing to cut off the flowering stems, for then the plant will be likely to send up some later blooms as mine has done this year. There is another plant somewhat like it in colour and form of flower which comes in later, but is coarser and taller, and lacks its softness; I mean *Telekia speciosa* or *Bupthalmum cordi-*

folium, a most showy looking plant and very suitable for a shrubbery or the background of a border.—D., *Deal*.

(To be continued.)



EVENTS OF THE WEEK.—To-day (Thursday) there will be Shows at Maidenhead, Faringdon, and Taunton; on Friday at Cheadle; on Saturday the National Co-operative Flower Show will be held at the Crystal Palace. On Wednesday, Thursday, and Friday, August 20th, 21st, and 22nd, will be held the great autumn Show at Newcastle-on-Tyne, and on the 20th and 21st the Shrewsbury Floral Fête will take place.

— THE PROPOSED FRUIT SHOW IN THE GUILDHALL, LONDON.—This Exhibition, which is being organised by the Fruiterers' Company, with the object of encouraging the culture of useful fruits in the home-steads and cottage gardens in the United Kingdom, will be held on the 6th, 7th, and 8th of October. Schedules are in the course of preparation, and classes are provided for cottagers, tenant farmers, gardeners, amateurs, and nurserymen. Prizes in the form of medals, money, and certificates will be awarded on the occasion. Sir James Whitehead, Bart. (Master of the Company), is Chairman of the Executive Committee.

— BEAUTY OF BATH APPLE.—Messrs. Cooling & Sons, Bath, send us specimens of this early dessert Apple. They inform us that fruits were quite ready for use on August 1st, and the crop a full one. The specimens are of good size for dessert, being from 2½ to 3 inches in diameter and about 2 inches deep. They are very symmetrical and handsome in appearance, being reddish crimson in colour. The flesh is tender, juicy and refreshing, rather than rich in flavour. We are told that this Apple only requires to become known to be a favourite with private as well as market growers. Such fruits as those before us would undoubtedly be acceptable on many tables and find a ready sale in markets.

— PEA CARTERS' ANTICIPATION.—Medium height Peas, as a rule, have done badly with us this season, but Anticipation is a noteworthy exception. It attained a height of about 3 feet, was very productive, and the pods were well filled with large and very sweet peas. Evidently it is a thoroughly reliable variety, and one of the best for small gardens. We find it does well grown in the market gardeners' fashion—that is to say, without stakes.—W. I.

— ASTER VEITCH'S EMPRESS.—Asters are very effective when planted in masses, especially if the heights of the respective varieties can be properly gauged. The new Empress, we find, is all that the vendors say of it—viz., dwarf, robust, and compact in habit, and also early flowering. With us the plants scarcely attain a height of 12 inches; they branch freely and produce very fine reflexed blooms. For bedding-out purposes they are particularly serviceable, and it is to be hoped that more colours will soon be added to this useful section. At present there are only crimson and white forms, the former being very effective when edged by the latter.—W. IGGULDEN.

— APPLE DUCHESS OF OLDENBURG.—For several seasons past I have taken every opportunity of writing and speaking in favour of this excellent variety. With us it rarely, if ever, fails to bear well, and this season some of the branches are weighted down to the ground with fine fruit. When ripe it is of very attractive appearance, being almost transparent and richly striped with bright red on the most exposed side. It sells readily for dessert purposes, but is somewhat acidulous in flavour, and it is as a culinary variety that it finds most favour here. The middle of September is as a rule quite late enough to keep it.—W. I., *Somerset*.

— THE FRUITERERS' COMPANY IN KENT.—We are informed that several representatives of this Company recently visited some of the fruit gardens in Kent, also the extensive nurseries of Mr. George Bunyard at Allington, near Maidstone, with which they were much pleased. A fruit feast followed, and was much enjoyed by the visitors.

— WILLIAMS' MEMORIAL.—A meeting was held at the rooms of the Horticultural Club, Hotel Windsor, Victoria Street, London, S.W., on Tuesday, the 12th inst., to consider the form of the proposed memorial to the late Mr. B. S. Williams. Dr. M. T. Masters occupied the chair, and there was a good attendance. Letters were read from Sir Trevor Lawrence, Bart., M.P., Baron Schröder, Mr. Thomson of Clovenfords, Sir Joseph Terry, Dr. Hogg, Mr. J. Watson, Mr. W. Robinson, Mr. Reginald Young, Mr. J. Vere Goodman, Mr. H. Perkins, Mr. Sander, Mr. W. Bull, Mr. W. Smythe, Mr. Stephen Osborne, Mr. Jas. Coombes, Mr. E. Pidsley, Mr. Bruce Findlay, Mr. Gaskell, Mr. Pyneart Van Geert, Mr. Eckford, and several other gentlemen, expressing approval of the scheme, and offering various suggestions as to the form it should take. The Chairman stated that they were all at one as to the proposal to establish a fund, and invited discussion as to the character of the scheme that should be placed before the public. Messrs. Cannell, William Paul, Pearson, H. J. Veitch, B. Wynne, Shirley Hibberd, Herbst, Outram, and other gentlemen addressed the meeting, and eventually the following resolution was proposed by Mr. Henry Cannell, seconded by Mr. H. J. Veitch, and carried unanimously:—"That this Committee desires to raise a sufficient sum to perpetuate Mr. B. S. Williams' memory by investing an amount sufficient to put a certain number of orphans on the Gardeners' Orphan Fund as Williams' Memorial Orphans, and also to give prizes in money with Williams' Memorial certificates for excellence in the cultivation of plants." A list of subscriptions was read over, and will shortly be published, while others will be invited to further the object in view.

— THE PROPOSED HALL OF HORTICULTURE.—We have pleasure in giving publicity to the following letter in furtherance of this project:—"You have, doubtless, heard of the scheme for building in London a Hall of Horticulture, with suitable premises, to form a centre for all the horticultural interests of the United Kingdom. Such central buildings, on a large scale, already exist both in France and in the United States, and have been found to be of the utmost value in promoting and advancing the gentle craft of gardening. Considering, therefore, that we English people claim to be the pioneers of horticulture, it appears little less than a public reproach that we are so far behind our neighbours on both sides of us in the lack of any central buildings. A project to supply this want was put forth a short time ago, and nearly £20,000 has been promised out of the £40,000 required. At the present moment a grand opportunity exists of acquiring a most advantageous site on the Thames Embankment, if only the remaining £20,000 can be raised to at once close with the offer, and it is in the hope that many will help us to raise this sum that I write this appeal. All that is asked is the loan of money free of interest, and the Trustees anticipate being able to begin to pay off the money lent in two years from the completion of the buildings. May I impress upon all the utmost importance of immediate action, as the offer of the site may, at any moment, fall through, and an opportunity be lost such as would probably never occur again in our lifetime. If every friend and lover of gardens would only lend the Trustees an average of £10 a piece, the thing would be done. The sums lent vary from £1 to £1000.—W. Wilks, *Shirley Vicarage, Croydon*."

— NATIONAL EXHIBITION OF PRESERVED AND DRIED FRUITS.—The Royal Horticultural Society being desirous of doing everything in its power to promote the extended cultivation of fruit, and having already held three Great Exhibitions of Apples and Pears, in 1883, 1885, and 1888, at which not far short of twenty thousand dishes of fruit were exhibited, and holding smaller exhibitions every fortnight throughout the year of the smaller and more perishable fruits, wishes now to draw attention to the great advance that has been made during the last quarter of a century in the preservation of fruit for winter use, and invites the co-operation of all who are interested in the subject. For convenience in comparing the different exhibits, it is proposed to divide them into the following classes:—Jams, Jellies, Syrup, Fruit Vinegar, Bottled Fruits, Fruits Preserved Whole in Syrup, Fruits in Spirits, Crystallised and Candied Fruits, and Dried Fruits. All kinds of British-grown Fruits are invited, also Colonial and Foreign-grown Fruits. The Exhibition is to be held in the Drill Hall, James Street, Westminster, on October 14th, 15th, and 16th. Medals, certificates, &c., will be granted by the Council on the recommendation of the Judges. Exhibitors are invited to send everything, as far as possible, in threes, any one of which the Council (or the Judges delegated by them) must have full right to open and taste at their discretion, the remaining two being left on exhibition. All intending exhibitors must give notice in writing to Mr. Barron, Superintendent Royal Horticultural Society's Gardens, Chis-

wick, on or before Wednesday, October 8th, stating the classes in which they intend to exhibit. Colonial and foreign exhibitors should make early arrangement, either directly or through a London agent empowered to act on their behalf. Schedules can be obtained from the Secretary of the Royal Horticultural Society, 117, Victoria Street, Westminster. We regard this as a very important exhibition, and trust it will be as extensive, diversified, and successful as the project deserves.

— MR. A. YOUNG sends the following six notes from Abberley :—
CELOSIA PYRAMIDALIS.—Occasionally a note is seen in the gardening press of good specimens of the above being seen, and then someone follows with notes on culture. The details are carefully carried out, but the end is only failure. To secure good specimens of *Celosia pyramidalis* it is necessary to procure a good strain, and this is the secret, as then, with ordinary culture, there is no difficulty in procuring good plants.

— REPOTTING ADIANTUM CUNEATUM.—I think these are repotted oftener than is necessary, the advice generally being to repot in February, just previous to the plants starting into growth. This checks them to a considerable extent and prevents free growth. We grow a few hundreds, and the best plants are those which have not been repotted during the past three years. We have several upwards of 2 feet across in 6 and 7 inch pots, and these are very healthy and of a dark green colour. The plants are watered liberally, and have an occasional dressing of Clay's fertiliser. These plants are grown in a large and dry conservatory, where stone and marble predominate. Good fronds are useful in most establishments, the demand often being greater than the supply, so probably this brief note may be acceptable to those who have failed through constant repotting. The drainage in the first place must be free.

— DIMORPHANTHUS MANDSHURICUS.—This handsome deciduous shrub cannot be very well known, or more specimens would be seen in gardens. We have several in the grounds here, and they have a very imposing appearance; in fact, they impart rather a tropical grandeur. The foliage is very distinct and handsome.

— DEUTZIA CRENATA FL. PL.—This *Deutzia* has been very effective this season, being literally wreathed in blossom. It appears to be indifferent to soil or position, and is effective in shrubberies in the summer.

— SPIRÆA ARIÆFOLIA.—We have a very handsome specimen of this elegant *Spiræa* in bloom, in fact it is almost the same every season. It is especially adapted for planting in shrubberies. It must be very hardy, as in our case the situation is much exposed.

— RHODOCHITON VOLUBILE.—This quaint old-fashioned greenhouse climber is rarely seen nowadays, but what could be more effective at this season? We have it now in bloom, and it will continue growing and flowering until far into the autumn. Visitors always stop to admire it, and wonder what it is. There used to be a plant in the temperate house at Kew which covered a large space. It may be there now.

— AT the LEEK SHOW, to be held on September 5th and 6th, the silver medal of the Royal Horticultural Society is offered for six Orchids, and the silver medal and two bronze medals are provided for cut flowers exhibited by amateurs and cottagers.

— VERONICA SPICATA CORYMBOSA.—This hardy herbaceous plant is now in full bloom. It bears slender spikes of deep blue flowers, closely set together, and blooms from the bottom upwards. Bushy plants of it are conspicuous at a distance.—E. D. S.

— JULY WEATHER IN NOTTINGHAMSHIRE.—The following summary of meteorological observations for July at Hodsock Priory, Worksop, Notts, is sent by Mr. Joseph Mallender:—Mean temperature of the month, 59°0'. Maximum on the 13th, 74°2'; minimum on the 12th, 41°6'. Maximum in the sun, on the 26th, 134°4'; minimum on the grass, on the 12th, 34°5'. Extreme range, 32°8'. Mean temperature of the air at 9 A.M., 59°5'. Mean temperature of the soil 1 foot deep, 58°5'. Sunshine—total in the month 149 hours, or 30 per cent. of possible duration. The brightest day was the 24th, and we had no sunless days. Total rainfall, 2·12 inches. Rain fell on nineteen days. Average velocity of wind, 9·4 per hour; velocity exceeded 400 miles on two days, and fell short of 100 miles on three days. Approximate averages for July—Mean temperature, 6·12°. Sunshine, 160 hours. Rainfall, 2·36 inches. A cool, showery, and cloudy month, with an absence of any really warm weather.

— JULY RAINFALL IN HANTS.—I send you the amount of rain which fell here last month, as the amount was so much above the average of any corresponding month for years. On the 17th of the month 3·04 inches fell in twelve hours, and of this amount 1·40 inch fell in one hour and a half. The total amount for July was 4·92.—A. J. L., *Stockbridge*.

— THE WEATHER LAST MONTH.—July was a rainy month without any settled weather, and very bad for haymaking and keeping the land clean. The total rainfall was 2·65 inches, which fell on seventeen days, the greatest daily fall being 0·60 on the 2nd, when we had a heavy thunderstorm. The barometer varied much. The highest reading was 30·28 inches at 9 A.M. on the 20th; lowest 29·26 at 9 A.M. on the 1st. Highest shade temperature 75° on the 13th, 17th, and 23rd; lowest 42° on the 12th; lowest on grass 42° on the 4th, 10th, 12th, 20th, and 29th; mean temperature of the month 61·46. Wind in a westerly direction twenty-six days, the garden spring running 18 gallons per minute on the 31st.—W. H. DIVERS, *Ketton Hall Gardens, Stamford*.

— CLITORIA TERNATEA.—Referring to your notes on this plant in last week's Journal, I had not seen Paxton's opinion of it before, and regret to say I have not found it so easy of cultivation as he considered it to be. A gentleman who called here some three or four years since kindly gave me a few seeds of it which he had collected in India, and told me at the same time what a beautiful flower it was as seen growing out there. The seeds were sown and gave us two plants, which were grown in a stove all the time, but only produced two or three flowers, and then dwindled away. At no period of their growth did they show any vigour, and they left me with the impression that it is by no means easy to cultivate them in this country successfully. If any of your readers have good plants of it the particulars of their mode of culture would be interesting and useful. Another plant said to be remarkable for its beauty (*Antigonon leptopus*), obtained in the same way, has not flowered, and grows very weak and thin, but has managed to survive to the present time.—W. H. DIVERS, *Ketton Hall Gardens, Stamford*.

— THE FOLLOWING IS A GOOD SELECTION OF DAHLIAS.—Show Dahlias: Muriel, yellow; Mrs. William Slack, light lilac; Mrs. Dodds, deep purple; Gloire de Lyon, pure white; Flora Wyatt, light bronze; Harrison Weir, primrose yellow; Mrs. Langtry, lilac, tipped with purple; Louisa Neate, delicate pink, centre creamy white; Burgundy, deep purple; Eclipse, bright orange scarlet; John Bennett, deep yellow, tipped with scarlet; Joseph B. Service, deep yellow. Bouquet, Pompon, or Liliputian Dahlias:—Forstmeister Gschwina, crimson, shaded amber and white; Garnet, orange scarlet; Catherine, yellow; Red Gauntlet, deep red; Little Wag, light purple; Little Bride, white; A. Hubner, bronze and yellow; Rosetta, purple; Prince of Liliputians, maroon; Coquette, light bronze; Fanny Weiner, deep orange; Leila, reddish buff, tipped with white; Profusion, dark crimson; Lilac Gem, deep lilac; Rosalie, pale yellow, tipped faintly with rose; Little Bobby, crimson; Catherine Folkman, white; Iolanthe, orange; Don Juan, maroon, small and beautiful flower; Brunette, red; Pure Love, lilac rose; Golden Gem, yellow, tinted deep red. The above arranged in threes on a stand, covered with a bed of fresh green moss, are very attractive and beautiful.—E. D. S.

— FROME FLOWER SHOW.—Although scarcely so good in some respects as its predecessors, this was yet a great success, and never before has the attendance of visitors been nearly so satisfactory. Fine-foliaged plants were well shown by Mr. E. Wilcox, gardener to Mrs. Sinkins; W. Iggulden, gardener to Lord Cork; Ferns by Mr. E. Brown, gardener to Mr. C. Bailly, and Mr. W. Iggulden; Fuchsias by Mr. J. Edwards, gardener to Mr. J. Knight, and Mr. W. Strugnell, gardener to Mr. A. R. Bailly; groups by Mr. H. Wright, gardener to Mr. Haley, and Mr. Strugnell, the competition in these and several other plant classes being good. The principal prizewinners with cut flowers were Messrs. Iggulden, Strugnell, Wilcox, and Brown; and with Roses Messrs. Keynes, Williams & Co., Salisbury; G. Cooling & Sons, Bath; and Dr. Budd, Bath. Fruit was shown in fairly large quantities and of good quality. Mr. Iggulden took the first prize for a collection of six dishes, staging good Black Hamburgh and Muscat of Alexandria Grapes, Melon The Countess, Peach Sea Eagle, Nectarine Lord Napier, and Apricots, all good. Mr. Strugnell was a very creditable second with a very similar collection, and Mr. R. Phillips, gardener to Mr. John Bailly, third. These exhibitors, and Mr. W. Bridgman, gardener to Mr. E. R. Trotman, were the principal prizewinners in the other fruit classes. A capital lot of vegetables were shown, and Tomatoes, notably Carter's Perfection,

were remarkably fine. A grand group of plants was arranged by Mr. W. Pratt, gardener to the Marquis of Bath, Longleat, not for competition, also some splendid bunches of Grapes.

— **WORTH HORTICULTURAL SOCIETY.**—On Wednesday, August 6th, one of the most brilliant days of the season, this Society held their seventh annual Show, by the kind permission of Mrs. Montefiore, in her beautifully laid out and highly kept grounds of Worth Park, Sussex. To judge from the large attendance during the afternoon this must be a highly popular institution with all classes in the neighbourhood. The exhibits were in every respect creditable to the local men who chiefly brought them together. For groups of plants Mr. J. Wilson, Crawley Down Park, Mr. A. Langridge, Hay Heath, Worth, and Mr. W. Woodfine, South Hall, Worth, were the successful exhibitors in the order named. Mr. R. Spinks was first for a collection of twenty-four bunches of cut flowers, Mr. F. Sutton being second. The latter had by far the best collection of vegetables, but by some oversight only staged nine dishes instead of ten, and was disqualified. Mr. A. Langridge was awarded first prize in this class. Mr. J. Wilson was first for eight dishes of fruit, and also first in the class for white Grapes with very fair Muscats. Chief amongst exhibits not for competition was a large bank of plants, fitting one end of the tent, kindly sent by Mrs. Montefiore, and admirably arranged by her able gardener, Mr. Glen. He also showed some very finely coloured bunches of Gros Guillaume Grapes, and splendid samples of Prince of Wales Peach. Messrs. J. Cheal and Sons had a bright lot of their single and Pompon Dahlias, and Mr. J. Willis, florist, East Grinstead, had a group of Ferns. Cottagers are encouraged here by giving good prizes and plenty of them, and they respond with a will. This Society is fortunate in having so liberal a supporter as Mrs. Montefiore, and in having Sir F. A. Montefiore as their President. Mr. A. G. Hobbs, Crawley Down, is the Honorary Secretary, and the arrangements showed that he was ably supported by a Committee of practical men.

— **THE WALKLEY (SHEFFIELD) FLORAL AND HORTICULTURAL SOCIETY.**—The fortnightly meeting held on Friday, August 1st, was rendered attractive by the fine display of flowering and foliage plants, cut blooms, Ferns, fruits, and vegetables brought together by the members for the purpose of gaining marks of merit, which at the end of the year are added together, those exhibitors receiving the highest number having the first chance of selecting from a number of valuable prizes. The record of marks on this evening was higher than on any previous occasion, one member, Mr. Barnes, gaining 117, followed by Mr. Jarvis with 75, he having hitherto held the highest position. The total number of marks received by the members was 430. Among the exhibits may be specially mentioned some beautiful plants of *Lilium auratum*; one specimen growing in a 9-inch pot had three stems about 7 feet high bearing over a dozen open and massive flowers, shown by Mr. Carlton. A handsome and shapely standard Fuchsia, with a clear stem and well-balanced head, about 3 feet through, evenly and profusely flowered, was shown by Mr. Broomhead. The variety was named Spitfire. Mr. Hague, the President, showed some splendid Roses that would have been in perfect condition but for a heavy thunderstorm that prevailed just before they were gathered. He also showed some tall and well-flowered spikes of white Phlox, and a head of bloom of the beautiful *Campanula persicifolia alba plena* (the double white Peach-leaved Bellflower). It is a beautiful and useful flower for cutting. He also showed a good collection of Carnations, Picotees, and Pansies. Mr. Taylor had a bushy specimen of *Acalypha tricolor*, a stove plant similar in appearance to a *Coleus*, but having smooth, coppery, and red coloured leaves. The Judges were Messrs. Hannah and Smith. Mr. John Turner of Attercliffe gave an interesting address, illustrated with specimens, on "Wild Plants and their Utility."

— **SHEFFIELD FLORAL AND HORTICULTURAL SOCIETY.**—At the last monthly meeting of this Society Mr. James Wrigley read an interesting paper on "A Ramble through the Rivelin Valley." Mr. John Eadon presided. Mr. Wrigley dealt with his subject chiefly from a medical botanist's point of view, but he also mentioned much of the lore and superstition connected with the plants that he treated. Time would not permit, however, of his interesting allusions to, and eloquent descriptions of, more than half of the well mounted and neatly named specimens he had brought with him to illustrate his paper. The Rivelin Valley, the nearest and one of the most interesting valleys to the town of Sheffield, is full of interest to the lover of wild plants, and both Mr. Wrigley and the Chairman bore testimony to the pleasant hours they had spent on its sunny slopes and shady woodlands, by its babbling streams, miniature lakes, and rock-bound ravines, in search of wild

plants and Ferns. At the same meeting stands of good, fresh, and bright Roses were shown by Mr. Storey and Mr. Jackson, both amateurs, and by a professional gardener. Mr. Eadon and Mr. Davy showed some select varieties of British and exotic Ferns, the former taking first honours in the British class with a splendid and perfect specimen of *Athyrium Filix-femina Kalothrix*, in a 6-inch pot, with superb, finely divided, arching, transparent, delicate, and shining fronds, and an *Athyrium F.-f. Frizelli ramosum*, in a 5-inch pot. This variety is remarkable for being heavily crested at the apex of the fronds, and for the peculiar friselled and contracted appearance of the pinnæ on the other parts. Mr. Davy was second with an *Athyrium F.-f. Kalothrix* and a good specimen of *Scolopendrium vulgare crispum fimbriatum*, the fronds of which were broad, healthy in colour, and fimbriated along the edges. Mr. Davy was first with exotic Ferns, showing the compact, dwarf growing Japanese *Osmunda japonica corymbifera*, and a young plant of *Phymatodes Billiardieri*. In the professional class, Mr. Collier was the only exhibitor in both classes of Ferns with *Adiantum farleyense* and *A. gracillimum*, and *Lastrea Filix-mas cristata* and *Polystichum angulare* var. *proliferum*.

— **THE WAKEFIELD PAXTON SOCIETY.**—At the ordinary weekly meeting of the members of the above Society, Mr. Henry Oxley, the President, in the chair, the members proceeded to appoint seven gentlemen to act on behalf of the Society as Trustees of the proposed public park, along with those selected by the donors at the recent meeting held at the Town Hall. After some discussion it was unanimously resolved that the Society's seven Trustees should be Mr. Henry Oxley, the President of the Society (through whose indefatigable efforts the scheme has been brought to a successful issue), Ald. W. H. Lee, J.P., Mr. W. H. Kingswell, Mr. J. Gerrard (Government Inspector of Mines), Mr. B. Whiteley, and Messrs. G. W. Fallas and T. Garnett (the two Hon. Secretaries to the Paxton Society). Mr. George Gill of Eastmoor, a successful florist, then opened an interesting discussion on "The Carnation and Picotee," numerous fine specimens of which sweet and favourite blooms were exhibited on the tables. Mr. Gill, who has for a great number of years been an extensive grower and successful exhibitor of Carnations and Picotees, clearly and fully explained his mode of treating the plants from the first to the last stages, and gave some very useful and valuable advice, based on long and extensive practice. His remarks were supplemented by Mr. Maddock of Loft-house, Mr. Garnett, one of the Secretaries, and others, and at the close a very hearty vote of thanks was given to Mr. Gill. At a dinner of the members Mr. David Stephenson proposed "Success to the Paxton Society," and in doing so referred to the great and good work it is doing in providing recreation grounds, promoting the public park scheme, and arranging the annual winter garden exhibition. Mr. Oxley responded, and said the Society's success was due to the fact that its members were all imbued with the desire to benefit their neighbours, and never permitted either political opinions or religious views to sow discord amongst them. He alluded to the fact that the Society had raised about £1000 in eight weeks on behalf of the proposed public park. Mr. B. Whiteley remarked that it was mainly due to their much-esteemed and very indefatigable President, Mr. H. Oxley, that the public of Wakefield would next year be in possession of a public park. He warmly thanked Mr. Oxley for his services on behalf of the Paxton Society, and hoped he would long live to reign over it.

STRAWBERRY NOTES.

AUGUSTE NICAISE.

I NOTICE that this Strawberry is coming to the front. It is now some fifteen years since I became acquainted with it. It was grown in an orchard house for supplying the latest forced fruit, so was brought on comparatively cool. It certainly was a free cropper, and the fruit handsome in appearance, but the flavour was very indifferent.

UNSER FRITZ.

This variety was grown about the same time, and I am surprised that it is not more largely cultivated. It is very compact in growth, the fruit handsome in appearance, and the flavour excellent. It would be interesting if any gardeners who have grown it would state their opinion on its merits. I am under the impression that it is very little known. I have not grown it since I came into Worcestershire, as after trying three of our largest nurserymen I failed to obtain plants.—A. YOUNG.

SIR J. PAXTON.

No other variety of the common Strawberry I am acquainted with will give such a long succession of fruit from the same plants, and if the beds are disposed in about three positions, no other form, with the ex-

ception of Noble, need be grown, as far as we are concerned. Our first dish of Sir Joseph was gathered on June 9th from plants on a sunny raised border, and long before these were over the same variety was available in the open, the latest supply of large fruit being had from plants in a much cooler part of the garden. From the latter, and also those located on higher ground, we continued to gather presentable fruit until the end of July, and there are more still to come. It is not always possible to have such a long succession with the aid of Sir J. Paxton alone, but with us it is the last to fail in any season.—W. I. M.

I DO not know whether I shall be overstepping the mark in making a few remarks on Strawberries after we have had the benefit of the experience of the "big guns," but I am led to write a few lines through reading Mr. Iggulden's article on page 86. I entirely concur with him in the opinion that heavy manuring before planting only results in a superabundance of foliage and a light crop of fruit, which soon rots in wet weather. My soil is very heavy and sticky ("loving," we call it, for it is loth to part from you in wet weather), and I have this year and last tried a few rows which had a heavy coat of manure dug in before planting, and the results were gross foliage and little fruit, whereas in both years the crop of fruit on the plants treated otherwise was very good.

I plant out on land in good condition, but undug in autumn or spring, and in the latter case I pick off all flowers as soon as formed. No manure is given until the plants are in full flower, when they have a first dressing of artificial strong in potash, and this is not given unless we have a good rain to wash it in. Later on, when most of the fruit is formed, another dressing is given in showery weather, with the result of a heavy crop of fruit and not too much leafage. I find Sir Joseph Paxton must be planted a yard apart from row to row, for the long flower stalks hang over between the rows so far that it is hard to avoid treading upon the fruit if the rows are closer.

I was much interested in finding that Mr. Iggulden had very few slugs this year, for last year and the year previous I was so troubled with slugs that they ate nearly all my Scarlet Runners as soon as they came up, cleared off my seed bed of Brussels Sprouts, and finished by devouring any autumn planted Cabbages. This year they have done me no damage, and I have seen very few indeed, and this I attribute to the dry time in April and May, when, I think, the black-birds looked them up very closely.

Noble was my earliest Strawberry, and Oxonian my latest. To-day (August 1st) I had a good picking of the latter, and I shall certainly have one more dish. They are not planted on a north border, but with a southern aspect, so I consider it a very useful late variety. I had the plants from Mr. Gilbert, who, I believe, maintains that it is distinct from Eleanor, and I fancy he is right, although I must own I have not grown them side by side. Mr. Laxton kindly favoured me with a few plants of his Latest of All, but as they were rather weak I pinched out the trusses, so have not yet had the pleasure of fruiting them. For earliness and beauty of fruit combined with cropping qualities there is no Strawberry in the same street with Noble.—H. S. EASTY.



ROSE SOUVENIR DE LA MALMAISON.

THIS has long been a great favourite of mine, as I have frequently testified in the pages of the *Journal of Horticulture*, and it undoubtedly ranks among the most serviceable Roses grown. It flowers freely enough at the commencement of the season, but it is during August and up till the time severe frosts intervene that its good qualities are most apparent. The successional blooms, in addition to being very numerous, are of better form and colour than the earlier ones, and particularly durable in a cut state. It ought to be grown on its own roots, and the strong suckers thrown up branch and flower even more freely than do those of Tea Roses. By far the finest beds of the old Souvenir I have yet met with are to be seen in the pleasure grounds connected with Wilton House, near Salisbury. The plants are all on their own roots, and in the best health possible. In a few days the beds will again be in full flower, and must form an attractive feature in a generally beautiful and well kept place.—W.

ROSES AT THE RIPLEY (DERBY) HORTICULTURAL SHOW.

THE seventh annual Exhibition of the Ripley Co-operative Horticultural Society was held on Saturday, August 2nd. There was a good display of flowers and vegetables in the amateurs' and cottagers' classes, Stocks especially being largely and well shown. Roses formed the chief feature of the Exhibition, the quality of the blooms being very good. In the open class, for thirty-six varieties, the first prize was awarded to the Rev. J. H. Pemberton of Havering, Essex, whose best blooms were Her Majesty, Madame Joseph Desbois, Madame Eugène Verdier, Marshall P. Wilder, Horace Vernet, Prosper Laugier, Comtesse de Camondo, and Rosieriste Jacobs. Mr. H. Merryweather of Southwell was a close

second with a bright and fresh collection, Mr. Burch of Peterborough being a good third. Fourth, Mr. Frettingham of Nottingham. The other competitors in this class were Mr. Lowe of Derby and Messrs. Harkness of Bedale: the last-named was exhibiting at Liverpool on the same day. For twenty-four Roses (amateurs), the first prize was awarded to Mr. W. Boyes of Derby, whose Roses were young and of good colour. Second, the Rev. J. H. Pemberton; third, Mr. H. V. Machin of Worksop; fourth, Mr. Whittle of Leicester. For twelve Roses (local class), first, Mr. Alfred Elliott; second, Mr. S. Hawkins; third, Mr. D. Judge; and fourth, Mr. H. Hill.

GARDENERS' ORPHAN FUND.

PROPOSED MEMORIAL TO THE LATE MR. GEORGE DEAL.

AT the annual general meeting of the supporters of this Institution, held at the Cannon Street Hotel, on Friday, July 18th, it was unanimously resolved to specially commemorate the services rendered to the Fund by the late Chairman of the Executive Committee, by granting the benefits of the Fund to the seven orphan children who had that day failed to secure election.

To enable the Committee to put these seven children on the Fund the sum of £598 is required, and the Chairman (Mr. Sherwood), on behalf of Mr. Harry J. Veitch and himself, made the munificent offer that if a minimum sum of £250 was raised among the subscribers they would jointly undertake to provide the remainder.

At the annual dinner the Chairman (Mr. Shirley Hibberd) strongly urged that the most generous offer of Mr. Sherwood and Mr. Veitch should be promptly and heartily acknowledged by a special effort to raise the sum required in order to pay a graceful tribute to the memory of their late friend.

The appeal thus made was readily responded to, among other subscriptions announced being:—

	£	s.		£	s.
Sir Julian Goldsmid, Bart.,			Mr. J. Weekes	...	1 1
M.P.	10	0	Mr. J. Assbee	...	1 1
Messrs. J. Weeks & Co.	50	0	Mr. J. Munro	...	1 1
Baron Schröder	10	10	Mr. Peter Kay	...	1 1
A. H. Smee, Esq.	10	10	Mr. J. Walker	...	1 1
P. Crowley, Esq.	10	10	Mr. W. G. Gregory	...	1 1
Messrs. Laing & Sons	10	10	Mr. A. McKenzie	...	1 1
J. Wills Esq.	10	10	Messrs. Featherby & Son	...	1 1
J. Shirley Hibberd, Esq.	10	0	Mr. G. May...	...	1 1
T. Manning, Esq.	10	10	Mr. H. B. May	...	1 1
G. W. Baker, Esq.	10	10	Mr. E. Rochford	...	1 1
H. M. Pollett, Esq.	5	5	Mr. T. Rochford	...	1 1
M. C. Mitchell, Esq.	5	5	W. Furze, Esq.	...	1 1
William Bull, Esq.	5	5	Mr. G. Nicholson	...	1 1
H. J. Pearson, Esq.	5	0	Mr. C. H. Sharman	...	1 1
Dr. Hogg	5	5	Mr. W. Goldring	...	1 1
Dr. Masters, F.R.S.	3	3	Mr. R. B. Gilson	...	1 1
Mr. F. C. Bause	3	3	Mr. B. Wynne	...	1 1
Mr. G. Paul...	2	2	Mr. W. J. Brewer	...	1 1
Mr. H. Herbst	2	2	Mr. T. C. Ward	...	1 1
Mr. H. Turner	2	2	Mr. A. F. Barron	...	1 1
Mr. F. Q. Lane	2	2	Rev. W. Wilks	...	1 1
Mr. G. Bunyard	2	2	Mr. D. Morris	...	1 1
Messrs. J. & J. Rochford	2	2	Mr. William Marshall	...	1 1
Mr. W. H. Thomas	2	2	Mr. J. Wright	...	1 1
Mr. T. A. Dickson	1	1	Mr. M. Dunn	...	1 1
Mr. B. Hardy	1	1	Smaller amounts	...	19 4

The Committee acknowledge with gratitude the hearty manner in which the proposition to found a "George Deal Memorial" has been received, and heartily appeal to the many whom the Committee feel there are who would like to subscribe to this tribute of respect to the memory of Mr. Deal to send their contributions at once to the Honorary Secretary—A. F. BARRON, *Royal Horticultural Society, Chiswick*.

DOUBLE ANNUAL CHRYSANTHEMUMS.

OF these there have long been plenty in the varietal forms of Chrysanthemum coronarium, and a gay effect they produce in gardens, continuing growing and flowering till destroyed by frost. We have also seen semi-double varieties of C. carinatum, or tricolor, but not any equal in form and colours to specimens that have been sent to us by Messrs. Hurst & Sons, wholesale seed merchants of 152, Houndsditch. These were so striking that we have had a few of the best of them engraved, with a charming white flower for contrast. The most remarkable flower had a perfectly full crimson centre, and bright clear yellow guard florets. Several were bronzy yellow, the florets edged with red; others were in two shades of crimson. Some were white with pink centres, others lilac and rose, the imbricated ray florets being pencilled like the feathers of a bird. Some of the flowers were irregular, but others were as perfect as the best Asters or double Zinnias.

Having in view the sportive nature of the plants and the difficulty of fixing individual varieties, we understand it is intended to divide

them into two groups—bronze yellow, and lilac rose—and distribute the seed in mixture. This will afford various growers opportunities for

single forms of this fine composite are beautiful both in borders and pots, and the doubles will probably become as familiar companion plants



FIG. 19.—CHRYSANthemum CARINATUM FLORE-PLENO.

selecting and improving, and if they obtain a fair per-centage equal to those figured, they will add a feature of interest to their gardens. The

as are the double varieties of Zinnias and Pyrethrums with their single progenitors.

SALT AS A GARDEN MANURE.

SALT as a manure has long been applied to garden and farm crops. Its principal use, however, in gardens has been in the destruction of weeds, for it is well known that in large quantity it is destructive to vegetable life; hence it is employed for scattering over walks, or they are watered with a strong solution of salt, to destroy the weeds and moss appearing on them. On the other hand, in moderate quantities its application is attended with very satisfactory results; for, as remarked by Mr. Johnson in the "Science and Practice of Gardening," page 119, "The day has long passed when it was disputed whether saline bodies are promotive of vegetable growth," and the same author continues—"It is now determined that some plants will not even live without the means of procuring certain salts."

Although salt, or saline matter, enters the composition of all plants, it is evident, from the experiments made by Dr. Voelcker, that the application of a quantity of salt which proves beneficial to one kind of plant will be injurious to another. This he demonstrated by watering plants with water holding varied proportions of salt, and it is a remarkable fact that to most of the crops of the horticulturist even in very strong solutions it did not prove injurious. Even at the rate of twenty-four grains to a pint it "decidedly benefited Radishes, Onions, Lentils, and Cabbages," but "plants of *Anthoxanthum odoratum* (Sweet Vernal Grass) were killed by a solution containing twenty-four grains of salt per pint, after the lapse of one month." "Grasses are affected by salt more readily than any of the plants experimented upon." We may, therefore, conclude that salt in a certain quantity is beneficial to most vegetable crops, for we have Radishes or Raphanæ, Crambe (Seakale), Brassica, including Cauliflower, Broccoli, Borecole, and Turnips; Liliaceæ, including Onions, Leeks, and Asparagus, and, I may add, many of our most beautiful bulbous plants, and those with succulent leaves. Dr. Voelcker remarks, "Bulbous plants and plants with succulent leaves are especially benefited by the application of salt;" also Lentils, Peas, and Beans, and may we not safely conclude all the other Leguminosæ, or pod-bearers, as the Dwarf Kidney Bean and Scarlet Runner? Dr. Voelcker mentions the Thistle as being benefited by salt, and we may consider the Globe Artichoke and Cardoon to be equally so. Mr. Johnson completes the list on the authority of Saussure—viz., Beetroot, Rhubarb, Potatoes, Jerusalem Artichoke, Carrot, probably also the Parsnip and Celery, as these two belong to the same natural order, so that salt is beneficial to every kind of vegetable crop.

Of the value of salt there can be no doubt. In fact, from its application I have come to the conclusion that to the gardener it is one of the most valuable of manures. I have come to regard it as not only valuable, or, as stated by Mr. Thompson in "The Gardener's Assistant," page 121, "a necessary addition to the soil wherever marine plants, or such as naturally grow near the sea, are cultivated;" but to all, except it be Grasses; and even to these in small quantities, or less than for other plants, it is very beneficial. For some fruit trees it seems not to be so desirable as for others—for instance, the Apricot, Apple, and Cherry; but the Peach, the Pear, and the Plum are benefited by it. I need say no more respecting its value, but will proceed to its application, of which there are several modes, but I shall only name two—namely, alone and mixed with other substances.

Salt Applied Alone.—As a top-dressing salt may be applied to every kind of kitchen garden crop at the rate of ten bushels per acre, or half a gallon per rod. It may be given at the time of sowing, putting in, or planting the crop, but I consider it most advantageously applied when crops from seed have arrived at the thinning stage; to "put-in" crops, as Potatoes and Jerusalem Artichokes, it may be applied when they are well above ground, and before the first hoeing; to planted crops as soon as they are again rooted. Ten bushels per acre I think a sufficient quantity for a general dressing. Some crops will bear much more salt than the quantity named; for instance, Asparagus is not overdone at 1 lb. per square yard, or 43 cwt. per acre, and the best time to apply it is when the heads are appearing, and again early in May.

Cabbages may have repeated applications of salt, and so may most of the Cabbage tribe. Cabbages planted in September to stand the winter may in October be dressed, and again in March; Broccoli and Winter Greens after planting, and in October or early in November; whilst for most other members of the same family one application will be sufficient.

The value of salt as a manure may be esteemed principally from its entering into the composition of plants; but it possesses other values—one being that it is destructive to predatory vermin, such as slugs, and is found serviceable against grubs in Turnips, and club or ambury in the other representatives of the Cabbageworts. It has also another most valuable property—that of protecting plants

from injury by cold, or as it is stated in the "Science and Practice of Gardening," page 144, it protects "plants from suffering by sudden reductions of temperature by entering into their system, stimulating and rendering them more vigorous, impregnating their sap, and consequently rendering it less liable to be congealed." There can be no doubt of salt being advantageously used for plants of a succulent nature, such being liable to suffer in case of sudden reduction of temperature.

Salt Mixed with Other Substances.—This, I believe, is the most satisfactory method, for all soils require to be constituted of several ingredients for the production of healthy plants. Gardens long enriched with stable or farmyard manure in time become sick or worn out. Lime dressings have been advised, and are indeed very beneficial, often more so than dressings of stable manure. "When caustic lime or, as it is more commonly called, quicklime is added to a soil, it decomposes the salts of ammonia which the soil contains, driving off the ammonia, but which is absorbed and retained by the alumina in the soil. Caustic lime also promotes the rapid decay of vegetable and animal bodies in the soil"—(Science and Practice of Gardening, page 85). It has also been recommended to give dressings of fresh or maiden loam to long-cropped vegetable ground, choosing soil from a pasture, thus giving those very constituents which have been absorbed or taken up from the ground by every vegetable—viz., saline matters, and which are present in the maiden loam more than in old garden soil, because Grasses do not take up saline substances to nearly the same extent as do garden crops. Fresh soil mixed with old causes a change in the products; it gives to old soil an addition of one or other substance required by vegetable crops, for it cannot be that fresh loam is richer, as without manure it will not grow many vegetables to a fitting condition; therefore it is not in the fibres of the Grass about which so much is insisted, but in supplying those compounds of which the soil has been deprived by a continued course of vegetable crops, and those compounds are principally saline.

Lime does good, but it is known that "when salt is mixed with moist earth and lime a considerable quantity of carbonate of soda and chloride of calcium is produced, owing to the salt being partially decomposed, the chlorine of a part of the salt uniting with the lime, whilst carbonic acid supplies its place, forming carbonate of soda. This having the property of combining with silica and rendering it soluble may prove beneficial to plants by supplying them with that essential article of their food"—(Gardener's Assistant, page 121). Now, if we dress ground for Onions, one part with lime, another with salt, and a third with soot, the ground having in autumn been manured in the usual way, we find there is little, if any, difference between that limed and the part sown without the lime dressing—the produce is not materially greater; but that dressed with salt produces more than the limed part, and the parts dressed with soot more still. This would show soot to be the most fertilising of the three, but in none of these cases is the dressing so good as when the whole are mixed—that is, the lime, salt, and soot, which afford much the better crop of Onions. A bushel of lime, soot, and salt mixed and sown broadcast over the ground intended for Onions and Carrots prior to putting in the seeds is good against the maggot or grub which infests these vegetables, and is sufficiently stimulating. It is also an excellent dressing for ground in March intended to be planted with every kind of vegetable crop. It is valuable both as a manure and as a preventive and destroyer of insect pests.

Everyone knows the value of guano as a manure. It is considered to contain most, if not all, the constituents required by vegetables. I am persuaded, however, though it may be highly fertilising, that it is not so beneficial by itself as when mixed with salt, one of the inorganic elements that in guano is reckoned of very inferior value. In some guanos there is a considerable quantity of lumps, consisting for the most part of common salt (chloride of sodium). In the best samples of guano the chloride of sodium is about 3·00; of a sample consisting of hard lumps the chloride of sodium has been found as much as 49·70. Ordinary samples of Peruvian guano contain 5·00 of alkaline salts, potash, and soda. This quantity may be sufficient for cereals, but there is evidently not enough salt for kitchen garden crops, for I find crops dressed with guano alone do not produce so well as those dressed with one part salt to two parts guano, and at that rate 1 cwt. of salt to 2 cwt. of guano answers for every description of vegetable, but it should not be given in dry weather, for all the leaves upon which it falls it scalds or leaves a white blotch upon.

I may name a few of the cases in which I have found it most beneficial, though it answers well in all.

1, I had some beds of Onions, Carrots, and Parsnips on a plot of old garden ground, well trenched and in good heart. They were at a complete standstill, and grub already at work, making frequent wide gaps. They were dressed with the mixed guano and salt, about a peck to every two beds, each 4 feet wide and 40 feet long. This was previous to prospects of rain, and it fell as was anti-

culated. The grub was seen no more, the Onions, the Carrots, and Parsnips were good. Without the dressing there was no hope of a crop.

2, I had 1500 Celery plants on a plot of ground added to the garden the previous year; it is the virgin loam so much prized. The trenches were well manured. The Celery grew for a time, but afterwards came to a standstill. Guano alone was applied, but it did not improve anything but the colour of the plants; at last they were heavily dressed with the guano mixed with salt, and the Celery grew well. I had a like number of plants on old ground, and they grew well from the first, and were dressed with guano mixed with salt. I contrived to give it so as to keep it from the hearts.

3, Club, ambury, and all the grubs seemed to combine to prevent my Cabbages hearting, Cauliflowers heading, or Turnips forming. They were dressed with the guano and salt, and they reared their heads and were soon quite free of any grubs or pest of any kind.

Lastly, in a greenhouse I had some climbers in a border; they seemed to grow and flower finely up to June, when they came to a standstill. They were Passifloras and Tacsonias. Guano water, &c., had no beneficial effect, but I gave them about a peck of guano and salt broadcast over the border (30 feet by 3 feet), and then washed it out of sight with water from a hose. The effect was all that could be wished.

I am convinced that guano and salt in the proportions named will prove good for Vines, especially those that have a tendency to mildew; also for Peaches, which never do so well as near the sea or within reach of its influence. It will also be good for all plants subject to mildew. Salt and lime are the most destructive of all to fungoid life.

Ferns are speedily destroyed by guano and salt, but it is remarkable that if freestone be sprinkled with it that the stone in a few days becomes quite green from the growth of moss; hence it may be of value in newly formed rockwork.—G.

CULTIVATION OF HEATHS.

SEVERAL correspondents have requested some information respecting Heath, and we therefore give the following notes from an experienced cultivator, who has secured a large measure of success with these plants:—

Heaths are reputedly difficult to cultivate, but happily there are some species which will stand a greater amount of rough treatment than others, and it is always advisable for beginners to ascertain which they are, and commence operations with them. *Erica gracilis* is very useful for flowering in the autumn, winter, and spring, there being two varieties—one called *autumnalis*, the other *vernalis*. I have had the first in flower from October to February, and the latter from February till April. The flowers are small, but come in abundance, and are of a bright pink colour, and highly ornamental at a time of the year when flowers are somewhat scarce. This I have found to be of the easiest culture, and also readily propagated, as it strikes very easily from cuttings, which cannot be said of some sorts. But more of propagation presently. *E. hyemalis* is another sort that I consider easy to grow, and a very pretty kind, but it does not last in bloom so long a time as *gracilis*. I have had it regularly in bloom from November until February, so that I may consider it truly a winter-flowering sort. *E. colorans* I have usually in bloom about the same time. It lasts in bloom rather longer than *hyemalis*, is more erect in habit, and not quite so free in growth. The flowers are nearly white at first, but change to a reddish-pink when past their best. *E. mammosa pallida* I have generally had in flower late in the autumn. *E. cerinthoides* has often flowered with me in the winter. *E. Willmoreana* is a spring-flowering sort, and a very strong grower. These are what I have found to be free growers, and such as I believe are suitable to begin with, supposing anyone wished to begin cultivating Heaths. The treatment I have usually given them is very simple—merely cutting them down after flowering, and standing them out of doors in May, fully exposed to sun, wind, and rain, housing them in September, and giving them ordinary greenhouse treatment from that time until the beginning of May.

But this treatment will not do for most Heaths. *E. caffra*, for instance, is winter flowering, at least so I have found it; but it is of a more delicate constitution, and will not stand the rough treatment described. *E. mutabilis* I have in bloom the whole year round; but this also requires careful management, but the treatment of these is the same as what is necessary for what I call the choice varieties; and as I intend to give the details of my own method of treating them I will here merely remark that the time of flowering with certain varieties varies much, and that variation depends considerably on the treatment, but sometimes on the

season. *E. fastigiata*, *E. lutescens*, and *E. Vernoni* have flowered with me this season in March and April. The latter is now in full bloom, being the second flowering this season. *E. vestita coccinea* I have usually known to flower in the spring, but this season I have seen it flowering in August. This variation in the time of flowering frequently happens, but a good grower can generally keep them to the proper season. What I consider to be the better Heaths are mostly summer flowering, and are often grown for exhibition; but at present I will merely name such as are my own favourites, and what I have had to deal with.

E. ampullacea major, compact growing, flowers in July and August; the flowers of a light colour, changing to a reddish hue as they pass their best. This is a characteristic of several others, if not most light coloured ones. *E. Cavendishiana*.—A close compact grower of fine habit and foliage, with deep yellow flowers, which open in May and June. This is a general favourite. *E. eximia*.—One of the very best; a close compact grower, first-rate habit, and exquisite in the form and colour of its flowers, and usually lasts in bloom a long time. Flowers in June and July. *E. Hartnelli*.—Flowers about the same time as the last; flowers fine and full, not quite so full and free in habit as the above-named, but good for exhibition. *E. jasminiflora alba*.—Rather free in habit; one of the best white ones. Flowers same time as the last. *E. Massoni*.—This I like as well as any Heath grown, both from its habit of growth—the shoots always putting me in mind of the ascent of a rocket—and also on account of its fine flowers, which it produces in June and July. *E. metulæflora bicolor*.—Another favourite, which, when well grown and flowered, is second to none for beauty; but it is not quite so profuse a bloomer as some—at least, so I have found it. Flowers in June and July. *E. retorta major*.—A most profuse bloomer, of excellent habit, compact, and free, hanging over the sides of the pot, and flowering at every point. June and July. *E. tricolor rubra*.—A good sort, as it shows up the flowers well; but rather spare than otherwise in habit. *E. tricolor Wilsoni*.—Good both in flowers and habit. These flower in June, July, and August, consequently are good to grow for exhibition.

The above are known to Heath growers as good sorts, and there are others equally good; but what I have named would be a good selection though a small one, and it is always advisable to begin with a few, as before said. Those who have had little to do with this genus had better use a little caution and begin with the strong-growing *Ericas*, for after a little practice with such they will acquire a certain amount of confidence that may soon enable them to handle choicer kinds, it being a consideration that while a small plant of *gracilis* may be bought at a nursery for 1s., a plant the same size of *Massoni* would most likely cost 5s., perhaps more.

Most growers differ on several minor points of detail. Almost every Heath grower has his own peculiar ways and opinions, and I will confess that I have mine; but then nothing suits me better than to learn the exact methods of other growers, so that, if I find their ways better than mine, I gladly adopt them. My object in penning these notes is simply with the idea that others may like to learn from my practice as much as I should like to learn from theirs; I will therefore give my experience in detail, and begin first with

SOIL.

When in the neighbourhood of London I have used a peculiar kind of peat or heath soil such as I have not seen elsewhere. This peat, with the addition of a little more silver sand than it naturally contained, made a most perfect soil for Heaths, and they were sure to thrive in it; but then this peat may not be obtainable everywhere, so that we must do what we can with the best within reach. Peat earth of some kind it must be, but the more fibry the better—just the mere turf pared off if possible; the tougher it is and the harder to chop up the better. But even fibry peat may not be at hand, and then, when it is for growing the choicer sorts of Heaths, great care is necessary, and I will just explain how I bring it into a condition that I can trust the roots of Heaths in it. I first chop it up with a spade, and then rub it through a sieve. The latter operation is not necessary, but I prefer doing it for the sake of the rougher fibre, which I consider an important ingredient in the drainage; if white moss can be obtained that will answer the purpose, and the peat need not be sifted. Whether sifted or not sand must be added; I add about a third of silver sand. If silver sand is not to be had drift sand or any other sand may be used; but it should be well washed of all earthy matter. The way I have done this is to nearly fill a pail or bucket with sand, fill up with water, stir well, pour off the water, add more, repeat the process until the water runs off clear, then dry the sand, and it is ready to be well incorporated with the peat. Peat itself without sand, or with very little, is a very unsuitable soil for putting any plant in. When wet it soon turns sour, and if it once becomes thoroughly dry it is difficult to make it properly moist again. Plenty of sand

mixed with it makes it both porous and absorbent. Any kind of well-washed sand will accomplish this object, and will do provided there is no pernicious quality in it. Silver sand, however, is best, and even if another kind of sand is used it is still advisable to mix some of this with the soil, since it is said that the Heath derives its silica from it; it therefore supplies an article of food. But, in addition to sand, I invariably mix with the peat a large quantity of broken pots. This I consider most useful, for it makes the soil still more porous and absorbent, and there is little chance of the soil becoming sour. The soil when ready for potting is about one-half peat, the other half equal portions of sand and broken pots.

POTTING.

This requires a little care and skill, for much of the success depends on it; indeed, so much so that I can scarcely consider a plant under control unless I know how it has been potted. In the first place the pot should be thoroughly clean, and just dry enough to show no moisture on it. If too dry it is apt to absorb the moisture from the soil. The plant about to be potted should be just nicely moist, neither more nor less so than the soil to be used in potting. The pots should be neatly drained, and this does not depend on the quantity of drainage, but on its arrangement. I generally first put a crock over the hole, convex side upwards. I quite agree that it is a good plan to place it convex side downwards in order to keep worms out of the pot, but I never like placing Heaths where worms have a chance of getting in. Round this I place pieces rather smaller, and cover with crocks broken smaller still, but not fine, over this a thin layer of peat fibre, then a little soil. It is then ready for the plant, which should be placed at the proper height, simply taking care not to bury the collar, and to leave room for water. I generally use a blunted stick to press the soil together, but take care that it is merely rendered solid and not hard.

WATERING.

Supplying water at the right time and in a proper manner I consider essential to the successful culture of Heaths; but then if the plants are potted with the soil and in the manner I have described, there is less chance of giving them too much or too little. The soil absorbs a certain amount of water, the rest drains away, and what the soil retains will never stagnate, for a healthy plant will gradually appropriate it; and if by chance water should be withheld until the soil becomes dry, its free open nature will soon allow it to percolate through. A Heath seldom requires water immediately after potting, and sometimes it may remain a week or two, supposing it to be in the winter, for I follow no rule as regards the time of the year in potting; but when a plant is watered for the first time after potting, it should be done thoroughly, so as to wet the mass of soil through, and this cannot very well be done without filling up the pot three or four times. This is invariably my practice, for I find that if the soil is not properly moistened at the first watering after potting, it never becomes so afterwards, and plants have often died in consequence. After this, when the plants want water, filling up once will be sufficient. A practised eye can tell at once when a plant wants water; but few good growers ever trust their eyes only, but generally ring the pot and feel the soil in addition. At the first watering after potting I generally use a fine rose, but afterwards merely pour the water on the soil from the spout of the watering-pot. During the summer, and while in flower, Heaths require a great deal of water; but in the winter, and while at rest, they may be allowed to become all but dust dry, for a Heath may appear very dry, and even flag, when a watering will cause it to expand and pick up again; but when a plant shows signs of distress from over-watering, it is mostly in a dying state, and will be hard to recover, even if that be possible. There is little fear of over-watering provided the soil is free and open, and the drainage perfect.

SUMMER TREATMENT.

About the beginning of May, the more hardy sorts, as *gracilis* and *Willmoreana*, may be set entirely out of doors, if the soil is free, and the drainage good, and they are placed on a good bed of ashes, on boards, or bricks, or in any way so that worms cannot get into the pots, and they will take no hurt until about Michaelmas if they are merely watered as required. But for choicer sorts no place can be better than a brick-built pit, having a good slope or pitch to prevent the possibility of drip from the glass. Draw the lights entirely off on all favourable occasions, putting them on in wet weather and on bright sunny days, and adding a slight shade, but tilt the lights at the side, and keep neither lights nor shades on longer than is necessary to protect from rain or too bright sunshine. Heaths are sometimes stood in a shady place without covering. In this case they must be turned on their sides, should heavy rains occur; but if left too long in that position they are apt to turn the points of the shoots upwards, which puts them out of shape.

In my younger days I have been called up in the middle of the night to turn down a lot of specimen Heaths, and other plants. This is no joke; and although I would rather do it now than allow favourite plants to become injured or killed, still I would rather evade the necessity of doing so, or of giving others the trouble, by putting the plants in a place where they would be safe from injury from drenching rains. In places where there are plenty of hands to run and shut up pits, frames, &c., or turn down plants, there is less chance of accident; but in most places this is not the case, and it becomes necessary to avoid such running about, which breaks into the day's work more than lookers-on would suppose. And if plants are to be kept under cover, it must be where they can have fresh air night and day, and not be overhung by other plants.

WINTER TREATMENT.

When housed about Michaelmas, supposing the plants to have been freely exposed, care should be taken to give them all the fresh air that can be admitted to them, for under no circumstances will they thrive and do well in a close or confined atmosphere. Keep them cool, and rather dry than otherwise, and never attempt to hurry them into growth. I should have said that after about the middle of August, the more sun the plants have the better, as this will harden the wood and induce them to flower better. In the autumn and winter mildew sometimes attacks the Heath, but rarely have I had plants troubled with it, as good drainage, a free open soil, and plenty of exposure to the air, will prevent it, and if it has made its appearance a dusting of sulphur will cure it. Heaths are also sometimes infested with scale, but this is only when they become pot-bound, or are crowded too much in the wood, or are placed too closely together. This pest is difficult to eradicate if it happen to get ahead, but strong soapy water rubbed on with a sponge or soft brush will destroy the insects. Some of the softer-wooded kinds are sometimes troubled with green fly, which is easily destroyed by fumigation. But, generally speaking, Heaths are very clean in their growth, and if kept in good condition will give the cultivator very little trouble as regards pests of any kind. This I consider a great recommendation to their cultivation.

TRAINING.

The training of Heaths not only requires both skill and judgment, but it is an art acquired only by practice. A well-grown and well-trained Heath is one of the most beautiful productions of the plant department that can well be conceived. To grow and train one as it should be requires no mean display of skilful handling. There should be few sticks, and those thin and tapering, and painted green to match the foliage. The bast matting should be good, and used very thin. I greatly dislike using thread, as some make a practice of doing. The shoots should be trained-in at regular distances, at the same time giving the whole plant a natural and easy appearance. But those who know how to train a Heath will not want telling, and those who do not will learn more by practice than from description. Men who have to use heavy tools can seldom train these plants well, and this is often exemplified in the specimens produced in many places, and which exhibit a countless host of sticks, and an appearance the opposite of easy or graceful. A Heath to look well should have the pot proportioned to the size of the plant, and be trained in such a manner that the eye is not attracted by the sticks.

PROPAGATION.

The propagation of Heaths is not generally a part of the duties of the gardener, indeed very few can spare the time necessary, or have a suitable place in which to strike these plants. Propagators of Heaths and other hardwooded plants must undergo a certain training in order to qualify them for the work, and when they become competent they generally command good wages. Propagating such plants is an art, and, according to the division of labour it should be left to those who have studied the art, and certainly those who are unacquainted with it must not suppose it is equivalent to striking cuttings of bedding-out plants. Some kinds of Heaths will take from six to nine months from the time of inserting the cuttings till these become rooted, and some hardwooded plants will take twelve months, and all this time they require daily attention in wiping the glasses and shading. I simply mention this, so that those who may be unacquainted with the process may be prepared for what they have to do should they make the attempt. I have struck various Heaths more for amusement than anything else, and in five years' time have had plants which I consider repaid all the time and attention they required. "This is a long time to wait," many will say. True, but then the time comes at last, and it must be remembered that there are propagators now engaged in striking Heaths that in three or four years' time will make small flowering plants. The process I have followed is to fill two or three pots of a suitable size about

three parts full of drainage broken rather small, then a layer of peat fibre, then a mixture of peat and silver sand, then half an inch of well-washed silver sand, the whole well watered. The cuttings are small shoots about an inch long, taken as near the collar of the plant as possible and the lower leaves stripped off. They are dibbed into the sand with a very small dibber, and a little water is allowed to drip on them to settle the sand about them. A bellglass is then put over them, and they are set in a shady part of a warm greenhouse; no sun is allowed to shine on them, and the inside of the glass is wiped every day.—F. C.



BUD FORMATION.

PLANTS of Chrysanthemums grown by the method most generally practised for the production of large blooms are this season forming their flower buds in a somewhat irregular manner. In a general way cuttings that were struck from the end of November until the middle of January make the first, or natural "break," from the beginning of May until the middle of June, according to the variety and the time the cuttings were inserted. Some sorts make this first break at 1 foot high, while others will not start into additional growth until the stem is 4 feet high, so variable is the manner of growth in different varieties. When what are known as "crown" buds form at the right time they invariably produce the best blooms, although they may not always be suitable for every person alike, and available just at the time required for any particular date. It is an utter impossibility to lay down rules for bud formation which will suit every person and district. Experience will teach individuals what modification is necessary from the general principles in their own case. The subject of bud selection requires more study than does any other phase in the culture of the plants.

From complaints by growers in different parts of the country of late I find there is a great disposition of plants to set their buds this season at what I will call awkward dates. The Queen family appears to be giving the greatest trouble in this respect. The cause of this premature formation of flower buds is no doubt due to the excessive heat experienced during the latter half of the month of May. On six successive days here the thermometer registered 80° and over. This great heat coming at a time when the plants were in 5½-inch pots, and many of them full of roots, would conduce to premature bud formation instead of free growth. I never remember seeing plants which have made so many flower buds nor lost so many of their bottom leaves as I have witnessed this season. This will cause some anxiety to growers regarding the selection of the best buds for their purpose in the various districts. My advice to those persons is not to be in too great a hurry to secure the buds, especially of early flowering varieties, but where the plants appear to be stunted and very much lacking vigour and freedom of growth, to apply some quick acting stimulant to push them on to the next bud. There is nothing better for the purpose than nitrate of soda, which is very quick in its effect; but if there is any doubt about a scarcity of roots in the pots, the soda should not be applied, as the stimulant would do more harm than good. There ought, however, to be scarcely any plants now lacking in root action, and if there be, the results next November cannot reasonably be expected to be very satisfactory.

There are two ways of applying nitrate of soda—in the dry state and in the form of liquid manure. If the former plan is chosen, a small portion of soil, loam, and leaves, in about equal parts, should be laid on the surface soil in the pot, pressing it down firmly. Into this the surface roots will run, and prove advantageous in receiving other supplies of stimulative food later on. On the added soil sprinkle finely ground nitrate of soda, half a teaspoonful to each plant, afterwards watering it in with clear water. The object of first placing the soil over the roots is to prevent their being killed by direct contact with the nitrate of soda. By dissolving half an ounce of nitrate in one gallon of clear water the stimulant can be safely applied by those who prefer to use it in this way. Before mixing with the water in bulk the soda should be dissolved thoroughly in a smaller portion of water, which may be warm for convenience, before adding to the bulk to be used. This stimulant will expedite the growth of both stems and leaves, and will render these plants in a better condition to receive other support later on, when the flower buds have set and are swelling evenly.

Some varieties, such as Boule d'Or and some other naturally late-flowering sorts, are forming their buds now in a regular manner. These, which require a long season of growth, must be "taken" as fast as they form, as if they were to be rejected, and the next buds waited for, the blooms in November would not only be too late but inferior in quality. Early-flowering sorts, if "taken" now, would lose much of their freshness before the time required in November; also the colour of the petals is very much paler than from later-chosen buds; and as colour in the flowers is an important point to study, in close com-

petition especially, it behoves exhibitors to obtain the best possible shades of it in the respective kinds.—E. MOLYNEUX.

CLASSES WANTED FOR AMATEURS.

I WRITE a few lines on what I think shows the unfairness of Chrysanthemum Show schedules to amateurs. In all the schedules I have seen the classes for cut blooms are divided into two divisions only, one "open" and the other limited to growers within a certain radius. This leaves the amateur no resource but to oppose big growers who have five or six times the number of plants that he has. If there were classes for persons who employed only one gardener, I think it would be better. I grow about a hundred Japanese for exhibition, but I cannot see a chance of getting in anywhere without going in the open classes, which I think is unfair, as I have to work all day at my trade. It is very expensive growing specimen blooms, and I for one shall have to give it up unless I can see some small chance of recouping myself.—NOVICE.

ALEXANDER PEACH.

I WAS very much pleased in reading Mr. J. Austen's remarks respecting this early Peach, page 93, and can fully endorse all that he says respecting it. Here we grow many Peaches and Nectarines of all the best sorts, both early and late, but do not force any, and Alexander is always ready to gather about the second week in July. It is highly coloured and good flavoured, and the tree is a heavy cropper. Alexander is earlier by a fortnight than any other Peach that I am acquainted with. It has often surprised me that it is not more frequently mentioned in gardening journals; and when looking over gentlemen's gardens I seldom, if ever, see it—at least, not in this neighbourhood. I feel sure that those who give this Peach a trial will be highly satisfied with it.—W. SHEPHERD, *Grenehurst Gardens, Capel, Dorking.*

OUR outside walls are not well furnished with Peach trees, nor does the fruit ripen so early as the position of the garden might justify us in anticipating. We shall not gather Hale's Early much before the middle of August. We are thus comparatively late with Peaches, as I saw ripe fruit of Early Beatrice in a Kentish garden on July 20th, and at Wilton House Mr. Challis was gathering fine fruit of Early Alexander at much the same time, Hale's Early and Early Beatrice being from a week to ten days later. At Witley Court, Stourport, Mr. Austen began gathering handsome fruit of Early Alexander on July 15th. Nurserymen, whether purposely or not, are in the habit of supplying Alexandra Noblesse for the Early Alexander, one being totally distinct from the other. No less than four instances of this unfortunate practice have come under my notice, and in each case great disappointment was expressed. Alexandra Noblesse is undoubtedly an improvement on the good old Noblesse, but it is far from being an early variety, and those who plant a tree under the impression that they will eventually be rewarded with richly coloured early fruit are to be condoled with in their deception.—W. I.

[We much regret to learn of the practice indicated, and trust it will cease, for the two Peaches are wholly dissimilar.]

THE ECONOMIC USES OF LEAVES.

EVERY part of plants and trees is more or less utilised by savage and civilised men—the roots, stems, sap, bark, fruit and seeds, and leaves. If we take the foliage, apparently the most insignificant part of the plant, how dependent are we on these for food, clothing, medicine, dyes, stains and various comforts. In tropical countries especially the domestic uses of leaves are almost innumerable.

The leaves of many Palms are largely employed for making hats. Those best known are Panama hats, made from the finely plaited fibre of the leaves of a South American Screw Pine (*Carludovicia palmata*). The tree occurs only on the slopes of the Andes. About 200,000 dozens of these hats are made in Ecuador and different States of South America, and they are distinguished from all others by consisting only of a single piece and by their lightness and flexibility; they may be rolled up and put in the pocket without injury. The plaiting of the hats is very tedious and troublesome; the coarse ones may be finished in two or three days, but the fine ones take as many months to plait. They vary in price, according to fineness and quality, from five dollars to a hundred dollars. The unexpanded fronds of *Livistonia australis*, prepared by being immersed in boiling water, are dried, and the fibre thus obtained is much valued for the manufacture of hats in Australia, which much resemble the celebrated Panama hats.

The rough leaves of the Chumico (*Curatella americana*) and of *Davilla lucida* are used for cleaning iron and polishing and scouring wood. *Curatella alata* is used in the West Indies for polishing bows, sabres, &c.; and in Brazil *C. sambaiba* serves all the purposes of sand-paper to the Indians for polishing their blow-pipes and war clubs. The leaves of *Celtis orientalis* are used for polishing horns in the East Indies.

The foliage of *Guaiacum officinale* is frequently used in the West Indies to scour and whiten floors, which it is said to do better than soap. Leaves sewn together are much used in India as substitutes for the plates and dishes of more civilised life. It is not always poverty that leads natives to use them in preference to metal or porcelain articles as caste or custom has often some influence in the matter. The

leaves principally used are those of the Egyptian Lotus; those of the Banyan by Brahmans, and the Plantain leaf.

The leaves of *Bauhinia Vahlii* are used in the construction of the curious, rude leaf-bellows in Sikkim, with which the natives of the hills smelt iron. These leaves, when sewn together, are used as plates, cups, rough tablecloths, rain-hats and caps. The leaves are heart-shaped and above a foot in breadth, and the same in length. Sewn together with twigs, they also serve for baskets for holding pepper, turmeric and ginger, and are likewise used for thatching. Under the name of "Chattahs," a kind of umbrella-hat or sun-shade is made in the East of the leaves of the *Licuala peltata* and the Talipot Palm. These Chattah hats are much worn by the ploughmen and coolies of Bengal and Assam.

The large fan-shaped leaves of the Talipot Palm are, like those of the Palmyra Palm, carried over the heads of people of rank as an umbrella, and are also used for making books and for various domestic purposes. They are also cut up into neat bracelets, worn by Santal girls in India. Those of *Vanda Roxburghii*, split, are also worn by them as anklets. Those of another species, *Borassus aethiopicus*, occur as much as 12 feet across, and serve also for the manufacture of baskets, mats, ropes, and sieves. The leaves of *Nipa fruticans* attains a height of 15 to 20 feet, presenting a very handsome appearance, resembling the fronds of huge Ferns. This graceful eastern Palm is utilised in various ways, the principal being in the manufacture of thatching for house-roofs. This manufacture is quite an industry in itself, and affords employment to many natives, chiefly women, the men simply bringing cargoes of the fronds to the women, to be stitched with split rattans, and made up. Atap roofs are the best adapted for these climates, for while the winds are never strong enough to blow them away, they afford the coolest protection against the sun of any kind of roofing known.

The leaves of the Palmyra Palm were formerly used like paper, to write books on, and to this day they are applied to this purpose in Orissa, Southern India, and Ceylon, where an iron style is employed to write upon them; in Bengal young children use them to write the alphabet lessons on. They are largely employed for making pans, bags, winnows, hats, umbrellas, and for thatching, &c. The leaf takes a dye well, and is worked up in Madras into pretty coloured patterns in baskets and mats.

The slips of Talipot and other Palm leaves are coming into European commerce for the manufacture of ornamental braids, and in the construction of straw or Leghorn hats. The fibre obtained from the base of the leaves of the Chusan Palm is used by the Chinese for making hats and coarse clothing. The sale of Palm leaves for decorative purposes in the towns of Elche and Alicante, in Spain, produces a considerable income to the towns.

Kadjan mats, manufactured out of *Nipa* leaves, are indispensable for travelling purposes; packed up in the smallest compass when not required, each mat is capable of affording sufficient cover at night for two or three persons, either in boat or forest journeys. They also form, almost exclusively, the material for side walls and divisions in houses. The young leaf unfolded and dried, under the name of Roko, forms the favourite covering for cigarettes in the Malayan Peninsula in preference to paper.

The large leaves of the Teak tree are used for plates, for packing, and for thatching. The leaves of *Cordia myxa* are employed as plates in Pegu, and to cover Burmese cheroots. In Bangalore the leaves of *Canna indica* are used by the natives in lieu of plates to serve their millet puddings and other dishes on. The leaves of the Papaw tree are employed by the negroes in washing linen as a substitute for soap. They have also the property of rendering meat wrapped in them tender, owing to the alkaloid papain which they contain, and which acts as a solvent.

For cordage and other textile purposes, numberless leaves are used, and they serve very generally for packing and wrapping up small parcels in India. In Guiana, Tibisiri fibre is obtained from the inner surface of the spiral leaves of the Ita Palm (*Mauritia flexuosa*). It is used by the Indians for making hammocks, &c. The leaves are cut before they are open, and the midrib separated by drawing each division of the leaf through the finger and thumb. After drying, the fibre is ready for use without further preparation. About a quarter of a pound may be procured from each leaf, and if the central leaf is left uninjured, no evil effect is produced on the tree. Bags or matting could be cheaply and easily made from this fibre, as well as hats similar to those known as Panama.—(*American Gardeners' Monthly*).

ROYAL HORTICULTURAL SOCIETY.

AUGUST 12TH.

SEVERAL very interesting plants, also imposing collections of flowers and important contributions of fruit furnished the tables of the Drill Hall on this occasion, but the attendance of Fellows was small, as is usual at this season of the year, when all who can do so appear inclined to "take their holidays."

FRUIT COMMITTEE.—Present: Sir C. W. Strickland, Bart., in the chair; and Messrs. John Lee, R. D. Blackmore, Harrison Weir, T. Francis Rivers, P. Crowley, G. W. Cummins, J. Cheal, G. Bunyard, W. Warren, W. Bates, G. Wythes, H. Balderson, F. Q. Lane, A. Watkins, and J. Wright. Mr. Barron announced that it had been decided that the Melon which was certificated at the last meeting under the provisional name of Barkham's Seedling should be *Advance*. The fruit was of distinctly superior

quality, and an advance on all others which had been placed before the Committee during the season.

Fruits of *Musa paradisaica* were sent by Mr. G. Wythes, Syon House, grown on plants from suckers planted in September last. They were large and well ripened, and a cultural commendation was awarded. It was not considered to be the true species, the fruits of which are larger and more slender than those exhibited. These, however, represented admirable culture, and were in excellent condition.

Mr. A. Lancaster, Holkham, Norfolk, sent two large and handsome fruits of a very pale green flesh Melon, grown and ripened without fire heat. They weighed 13 lbs., but the want of flavour did not justify any award. Mr. James Baldwin, Otterbourne, Hampshire, sent a "seedling" Pea, evidently a form of *Ne Plus Ultra*, and not equal to the true type of that fine old variety. Mr. A. Waterman, Preston Hall Gardens, Aylesford, sent very fine pods of the "Preston Hall" Scarlet Runner. The Committee recommended that the variety be grown at Chiswick, where a trial of Runner Beans was suggested as desirable.

Mr. S. Mortimer Rowledge, Fareham, sent splendid fruits of his *Express* Cucumber, and a first class certificate was unanimously awarded. It was the opinion of the Committee that more perfect Cucumbers had never been placed before them than the specimens in question. The variety is the result of a cross between Purley Park Hero and Tender and True.

Mr. T. T. MacGregor, Great Waltham, sent a good dish of Tomatoes, also a stem bearing bunches of fruit. He had found the variety profitable for market, as are many others, and no award was made. A splendid assortment of between twenty and thirty varieties were exhibited from Chiswick, and a cultural commendation was accorded to Mr. A. F. Barron. Messrs. T. Burton & Son, Erith Road, Bexley, sent eight boxes of splendid Peaches grown on the heavily cropped trees that were referred to on page 41 in our issue of the 17th ult. The varieties were Osprey, Princess of Wales, Sea Eagle, Albatross, and others. A fruiting branch with four large fruits in a length of 9 inches was also exhibited. A silver medal was unanimously recommended for this meritorious exhibit. Mr. W. Roupell sent from his garden at Streatham dishes of Irish Peach, Mr. Gladstone, Peter the Great, and Red Joanet-apples—a most creditable display from a suburban garden. The fruits of Mr. Gladstone were highly coloured, and very favourable opinions were expressed on the comparatively new Apple Peter the Great. A vote of thanks was accorded.

Messrs. James Veitch & Sons exhibited a remarkable collection of Gooseberries, Currants, and early Apples from their fruit grounds at Langley. There were eighty dishes of Gooseberries, including choice small dessert and large exhibition varieties; fifteen dishes of Currants, ten of Apples, and a good dish of Jargonelle Plums. The most noticeable Apples were Early Harvest, Mr. Gladstone, Oslin, very fine; Irish Peach, and Lord Suffield. A silver-gilt medal was unanimously recommended for this interesting collection. Also unanimously, a silver medal was recommended for fifty dishes of remarkably fine Gooseberries, exhibited by Messrs. Paul & Son, Cheshunt.

FLORAL COMMITTEE.—Present: Messrs. W. Marshall (in the chair), Henry Cannell, George Paul, Shirley Hibberd, H. Herbst, W. Goldring, W. C. Leach, G. Nicholson, H. B. May, Chas. Jeffries, Harry Turner, Edward Mawley, Rev. H. H. D'Ombrian, Wm. Kelway, John Fraser, and Dr. M. T. Masters.

The floral section was exceptionally strong and interesting, the hall being well filled with a variety of exhibits, comprising both garden and indoor plants, also abundance of cut flowers.

Nepenthes Burkei exellens, exhibited by Messrs. James Veitch and Sons, Royal Exotic Nursery, Chelsea, was awarded a first-class certificate, and an award of merit was granted to the same firm for *N. B. prolifica*, also for *Hydrangea hortensis* fl. pl. *Anthurium Le Flambeau*, *A. hybrida delicata*, *Begonia Marie Louise*, *Gymnogramma schizophylla erecta*, and a collection of *Rhododendrons javanico-jasminiflorum* hybrids were also shown by Messrs. Veitch.

Mr. A. Wipf, gardener to N. Clayton, Esq., East Cliffe, Lincoln, sent three very fine plants of hybrid *Sarracenias*, one named *S. Claytoni*, raised from *S. Drummondii* alba and *S. Chelsoni*, received an award of merit. A large plant from the reverse cross had three dozen very fine and well coloured pitchers. This plant was considered by many to be worthy of some recognition. A cultural commendation was awarded for two fine spikes of *Hedychium Gardnerianum* from Messrs. J. Carter and Co., and an award of merit for *Petunia Holborn Blue* (*Clematis* section), the flowers resembling *Clematis Jackmani*. A bronze Banksian medal was awarded to Mr. G. Wythes, gardener to the Duke of Northumberland, for a group of well flowered plants of *Campanula pyramidalis*, blue and white.

Gladioli were extensively shown by the great specialists, Messrs. Kelway & Son, Langport, Somerset, and their collection, comprising many very fine varieties, was greatly admired. It is not easy to make a selection amongst so many splendid hybrids, all worth growing, but the following may be noted as exceptionally fine—Lord Carnarvon, vermilion scarlet, white throat; Clarence, rich red, deeply suffused with purple; Lady Carrington, rosy lilac, flaked with carmine; Empress of Germany, creamy white, flaked crimson, very large, good form; Malcolm, blush, deeply suffused with crimson; Shakespeare, ivory white, carmine throat; Emperor of Germany, rich crimson, clear white throat, finely formed flower; Mrs. Baines, orange red; and Duke of Fife, bright crimson, white throat, well formed. Messrs. Veitch and Sons also had a collection of seedling *Gladioli*, hybrids imported from America. These lack the substance of the best English and French

hybrids, nor are the colours so well defined. One named *Sensation* was perhaps the best. The Rev. H. H. D'Ombraïn showed three hardy varieties.

Dracænas.—A collection of these plants was shown by Messrs. B. S. Williams & Son, Upper Holloway, comprising such fine kinds as *voluta*, *Lonsiæ*, *Berkleyi*, *Tellingi*, *Reali*, *indivisi variegata*, *alba marginata*, *Fraseri*, *Vicomtesse de Belval*, *superba*, *Elizabethæ*, *Massangeana*, *angustifolia*, *majestica*, *pendula*, *imperialis*, *Guilfoylei*, *terminalis alba*, and *Lindenii*.

For *Dracæna Miss Glendinning*, which has narrow arching leaves of a dull bronzy green, the edges deeply margined with bright rosy crimson, a first class certificate was awarded.

Hardy Herbaceous Plants and Roses came from Messrs. Paul and Son, the Old Nurseries, Cheshunt, the former comprising a beautiful box of *Phloxes*; *Spiræas callosa*, *callosa alba*, *Nobleanum*, *canadensis*, and *grandiflora*; *Prunus Pissardi*, *P. domestica aurea*; *Alnus aurea*, *Hypericum oblongifolium* (award of merit), *Hydrangea paniculata*, and various *Carnations*.

Gloxinias came from Messrs. J. Peed & Sons, Roupell Park Nurseries, Norwood Road, London, S.E.—a bright and graceful display of flowers, rising from a groundwork of Maidenhair Fern. The excellence of this strain has recently been commented on.

Marigolds.—A collection of these from Messrs. J. Veitch & Sons, Chelsea, comprising African lemon and orange, French striped and miniature Orange (African) was much admired, and a silver Banksian medal was awarded. Mr. R. Dean, 42, Rancragh Road, Ealing, also had a fine stand of Africans of a very large strain, and was awarded a vote of thanks.

Dahlias.—A bright, fresh, and beautiful collection of Cactus, single and bouquet varieties was the contribution of Messrs. J. Cheal & Sons, Crawley. Amongst the former, a class of growing importance for garden decoration, the claret coloured Centennial, the fine pure white Henry Patrick, and the canary yellow Honoria were very noteworthy. Mr. T. S. Ware received an award of merit for Cactus Dahlia Robert Maher, clear pale yellow, a large, well formed, very handsome flower.

Trees and Shrubs.—A very interesting collection in pots and baskets came from Messrs. James Veitch & Sons. It included *Sciadopitys verticillata*, *Ceanothus azureus albidus*, pure white and agreeably scented; *Abies Tsuga*, a handsome Japanese species, the young growths gracefully pendulous; *Cupressus Lawsoniana filiformis*; *Acer argutum*, described as having beautiful autumnal tints; *Abies canadensis pendula* and *Eucryphia pinnatifolia*, a dwarf bushy shrub with pure white flowers, and a brush-like profusion of stamens, illustrated in the Journal of August 26th, 1880.

First class certificates were awarded to the following in Messrs. Veitch's group:—

Sequoia sempervirens alba spica, the growths tipped with greenish white, giving it a very distinct appearance; and

Tilia euchlora, described as a fine avenue tree, holding its foliage much longer than the ordinary Lime, with dark green leaves 6 to 7 inches across.

Amongst miscellaneous exhibits of flowers were a collection of Ivy-leaved Pelargoniums (cut blooms) from the Royal Horticultural Gardens, Chiswick; a box of the new double annual Chrysanthemums, illustrated on another page, from Messrs. Hurst & Sons, 152, Houndsditch, London, E.; seedling Fuchsias from Mr. A. Lye, Clyffe Hall, Market Lavington; seedling Carnations from Mr. A. Spurling, Blackheath Park; a box of a white Begonia named Octavie, closely resembling a Gardenia, from Messrs. H. Cannell & Sons, Swanley; also a box of seedling Begonias, a box of Verbenas, and pots of the fine Heliotrope Swanley Giant, from the same nurserymen; and a collection of plants and flowers—comprising *Brachycomes*, white, rose, and blue—*Arnebia cornuta*, *Torenia Bailloni*, *Tournieri*, and *White Wings*; and Carnations from the Society's Chiswick Garden.

A small collection of plants came from the Royal Gardens, Kew, for which a vote of thanks was accorded. Amongst them were cut flowers of seedling *Streptocarpus*, obtained by crossing *S. Saundersi* with *S. kewensis*, *S. Watsoni*, *S. Rexi*, &c., and flowers of *S. Watsoni*. A plant of *S. Rexi alba* was shown; also *Pentstemon puniceus*, *Stylidium graminifolium*, *Cyrtanthus Mackeni*, *Chironia pedunculata*, *C. palustris* var., and *Lobelia tupa*.

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair), Dr. Masters, and Messrs. J. O'Brien, E. Hall, J. Dominy, H. Ballantine, H. M. Pollett, and A. H. Smea.

Messrs. F. Sander & Co. exhibited a collection of Orchids, including a fine plant of *Cattleya Gaskelliana* with twenty blooms, and three other plants of the same species representing fine varieties; also *C. Dowiana*, *C. Schottiana*, and *C. Wilsoni*, *Angræcum articulatum*, *Phalænopsis Micholitzii* B.C., greenish white, yellow throat; and *Masdevallia hybrida Amesiana*. Messrs. Seeger & Tropp, East Dulwich, had a charming box of thirty *Satyriums* in fine varieties—*S. carneum*, pink and white; *S. e. roseum*, pink; *S. candidum*, white; *S. erectum nitens*, red and yellow; and *S. erectum*, pale yellow, being noteworthy. A silver Banksian medal was awarded. A good plant of the beautiful *Oncidium Lancanum* with twenty blooms on a spike was sent by F. Wigan, Esq. (Mr. W. H. Young, gardener), Clare Lawn, East Sheen (vote of thanks). From Messrs. B. S. Williams & Son came the pretty *Pachystoma Thompsoniana* and a collection of *Cypripediums*, including *C. grande*, *C. tonsum*, *C. Ashburtonæ superba*, and *C. ænanthum*. Mr. D. Cullimore, gardener to Malcolm S. Cooke, Esq., Kingston Hill, sent a plant

of *Cypripedium superbiens* with three blooms, each malformed; in one were two perfect slippers; the second had a double pouch, one inside the other. Referred to Scientific Committee. He also had a fine spike of *Lælia elegans*, a good dark form. Messrs. T. & J. Rogers, Fern Bank Nurseries, Lodsworth, sent a plant under the name of *Cypripedium incurvum*, which the Committee considered identical with *C. callosum*.

First-class certificates were awarded for the following:—

Masdevallia Lowi, exhibited by Sydney Courtauld, Esq. (Mr. A. Wright, gardener). The plant was small.

Saccolabium Hendersonianum, exhibited by Major Mason, The Firs, Warwick.

Sobralia Warscewiczii, exhibited by Messrs. Veitch & Sons. The plant was about 2 feet high, with broad dark green leaves, purplish mauve sepals and petals, lip same colour, pale yellow in the throat; not equal in beauty to the old *S. macrantha*.

Cypripedium H. Ballantine.—Hybrid, *C. purpuratum*, *C. Fairrieanum*.

NATIONAL CARNATION AND PICOTEE SOCIETY.

NORTHERN DIVISION.

THE annual Exhibition of the above Society was held in the Botanical Gardens, Manchester, on August 9th. There was much greater competition than at last year's show, and the Birmingham growers came out very successfully, taking by far the largest share of the prizes. The new S.B. C. H. Herbert, was again shown finely by the raiser, Mr. Herbert (of Thomson & Co.), taking four out of the five prizes in the single class. In the evening the gardens were lit by the electric light, and there was a large attendance of visitors. The awards were as follows:—

Class A, twelve Carnations, all dissimilar.—First, Mr. T. Lord, Todmorden, with fine flowers, characterised by great breadth of petal, of Master Fred, James Douglas, Thalia, J. D. Hextall, Edward Adams, Richard Bealey (very fine), Unexpected, Alisemond, Tim Bobbin, William Skirving, Richard Dean, Robert Lord. Second, Messrs. Thomson and Co., Sparkhill Nurseries, Birmingham, with larger blooms but not quite so good in quality of C. H. Herbert, Robert Thomson, William Skirving, George, James Douglas, Rifleman, Alisemond, Florence Nightingale, Harrison Weir, Thalia, James Merryweather, Robert Houlgrave. Third, Mr. R. Sydenham, Bristol Road, Birmingham, with Gordon Lewis, Robert Houlgrave, Rob Roy, John Harrison, William Skirving, Matador, Sarah Payne, Florence Nightingale, Thalia, Duc d'Aumale, Alisemond, Robert Lord. Fourth, Mr. B. Simonite, Sheffield. Fifth, Mr. H. Geggie, Bury.

Class B, twelve Picotees, all dissimilar.—First, Messrs. Thomson and Co. with fine blooms of good quality of Princess of Wales, Campanini, Favourite, John Smith, Lady Louisa, Mrs. Sharp, Juliette, Mrs. Payne, Zerlina, Thomas William, Mrs. F. Ricardo, Mrs. A. Chancellor. Mr. R. Sydenham followed closely with Dr. Epps, Favourite, Mrs. Sharp, Seedling, Mrs. Gorton, Hilda, Sylvia, Morna, Mrs. A. Chancellor, Lady Holmesdale, John Smith, Ethel. Third, Mr. E. Shaw, Moston, Manchester. Fourth, Mr. Geggie. Fifth, Mr. Beswick, Middleton, Manchester, who had a very fine bloom of Ann Lord in his stand.

Class C, twelve Carnations, not less than nine dissimilar.—First, Mr. A. R. Brown, Handsworth, Birmingham, with Fanny Hudson (fine), Thalia (three blooms, very fine), Edward Rowan, Edward Adams, Alfred, Squire Whitbourn, Alisemond (two blooms), George and Tim Bobbin. Second, Mr. S. Barlow, Stakehill House, Castleton, Manchester, with Robert Houlgrave, E. S. Dodwell, Sir Garnet Wolseley, Squire Llewelyn, J. D. Hextall, Squire Meynell, Master Fred, Cristagalli, Robert Houlgrave (two blooms), William Skirving, Dan Godfrey. Third, Mr. J. Edwards, Moston, Manchester, who had a fine bloom of J. S. Hedderley in his stand. Fourth, Mr. G. Bleachley, Whitefield, Manchester. Fifth, Mr. J. Whitham, Hebden Bridge, Yorkshire.

Class D, twelve Picotees, nine at least dissimilar.—First prize, Mr. A. R. Brown, with smooth, clean blooms of Imogen, Favourite, Jessie, Campanini (two blooms), J. B. Bryant, Mrs. Sharp, Clara Penson, Lady Louisa, John Smith, Thomas William, and Morna. Second, Mr. J. Whitham, with Gertrude, Clara Penson, Brunette, Thomas William, Ann Lord, Fanny Helen, Becky Sharp, Favourite, Dr. Epps, Miss Flowdy, and John Smith. Third, Mr. J. Edwards, with Mrs. Edwards, Mrs. Gorton, Lady Louisa, Dr. Epps, Clara Penson, Favourite, Muriel, William Summers, and two seedlings. Fourth, Mr. J. Bleachley.

Class E, six Carnations, dissimilar.—First, Mr. T. Helliwell, with Sybil, Robt. Houlgrave, J. D. Hextall, Master Fred, Squire Whitbourn, Sportsman. Second, Mr. G. Thornley, Middleton, Manchester.

Class F, six Picotees, dissimilar.—First, Mr. A. W. Jones, Handsworth, Birmingham, with very clean, smooth blooms of John Smith, Muriel, Sylvia, Campanini, Mrs. Payne, and Mrs. Sharp. Second, Mr. T. Helliwell, Todmorden, with Brunette, Ann Lord, Clara Penson, Favourite, and Mrs. Niven. Third, Mr. T. Barlow. Fourth, Mr. W. Taylor, Middleton. Fifth, Mr. W. Bacon, Derby. Sixth, Mr. G. Thornley.

Twelve selfs, Fancies or Yellow Grounds.—First, Messrs. Thomson with grand blooms of Terra Cotta, Almira, Blushing Bride, Gladys, Annie Douglas, Alfred Grey, Germania, C. H. Herbert, Ruby, Dodwell's s. 167, and a seedling, a true yellow ground bizarre. Second, Mr. T. Lord with Germania, Thalia, R. Butler, Mrs. Price, Rob Roy, Captain Cuttle, John Ball, The Bride, Mereury, and R. H. Elliott. Third, Mr. A. R. Brown with Patricia, Purple Emperor, Dodwell's s. 192, s. 191, s. 166, s. 154, s. 186, s. 609, Germania, Lady Edwards, Rose Celestial, and Terra Cotta. Fourth, Mr. J. Edwards. Six selfs, Fancies or Yellow Grounds.—First, Mr. A. W. Jones with Dodwell's s. 154,

Germania, The Bride, Alfred Grey, Agnes Chambers, and Mrs. Alfred, very fine. Second, Mr. J. Beswick. Third, Mr. W. Taylor.

Single Blooms.—Scarlet Bizarres.—First, Mr. Barlow with Robert Houlgrave. Second, third, fourth, and fifth, Thomson & Co. with C. H. Herbert. Crimson Bizarres.—First, third, and fifth, Mr. Lord with Master Fred; and fourth with Richard Bealey. Second, Mr. Thornley with Master Fred. Pink and Purple Bizarres.—First, Messrs. Thomson & Co. with Sarah Payne, second with a seedling, and fourth with Rifleman. Third, Mr. Lord with William Skirving; and fourth Mr. Helliwell with E. S. Dodwell.

Scarlet Flakes.—First, Mr. Lord with Robert Cannell. Second, Mr. Geggie with a seedling. Third, Mr. Helliwell with Sportsman. Fourth, Mr. Lord with Alisemond. Fifth, Mr. Sydenham with Alisemond. Purple Flakes.—First, Mr. Simonite with President. Second, Thomson & Co. with George Melville. Third, Mr. Sydenham with George Melville. Fourth and fifth, Mr. Lord with Jas. Douglas and Gordon Lewis. Rose Flakes.—First, Mr. Lord with Tim Bobbin, second with Thalia, and third with a seedling. Fourth, Mr. Helliwell with Sybil; and fifth, Mr. Brown, with Thalia.

PICOTEES.—Heavy Red Edge.—First, Mr. Jones, with John Smith. Second, Mr. Brown, with Mary D. Anstiss. Third, Mr. Sydenham, with Dr. Epps. Fourth, Mr. Taylor, with John Smith. Fifth, Thomson and Co., with Dr. Epps. Light Red Edge.—First, Mr. Lord, with Violet Douglas. Second, third, and fifth, Mr. Jones, and fourth, Mr. Whitham, all with Thomas William. Heavy Purple Edge.—First, third, and fourth, Mr. Jones, with Muriel. Second, Thomson and Co., with Mrs. Chancellor; and fifth, Mr. Edwards, with Zerlina. Light Purple Edge.—First and second, Mr. Jones, with Sylvia. Third and fourth, Mr. Shaw, with Clara Penson. Fifth, Mr. Sydenham, with Sylvia. Heavy Rose Edge.—First, Mr. Sydenham, and second, Mr. Brown, with Lady Louisa. Third and fifth, Thomson & Co., with Campanini and Mrs. Payne. Fourth, Mr. Jones, with Mrs. Sharp. Light Rose Edge.—First, Mr. Barlow. Third, Thomson & Co., and fourth and fifth, Mr. Shaw, with Favourite. Second, Mr. Jones, with Nellie. There were 405 single blooms in competition.

The premier Carnation was Master Fred, exhibited by Mr. T. Lord. The premier Picotee was Lady Louisa, exhibited by Mr. J. Edwards. Mr. Chas. Turner, Royal Nursery, Slough, sent down a fine exhibit of yellow grounds. The varieties were Mrs. Walford, Romulus, Mrs. Fenwood, Old Coin, Remembrance, Countess of Jersey, Victory, and Adela.

First-class certificates were awarded to Messrs. Thomson & Co. for their new S.B. C. H. Herbert; to Mr. B. Simonite for H. Pomroy C.B.; to Mr. J. Edwards for H. Rose E. Mrs. Edwards; and to Mr. C. Turner for yellow grounds Remembrance and Romulus. — A NORTHERN FLORIST.



HARDY FRUIT GARDEN.

BIRDS EATING FRUIT.—No sooner are the various small fruits finished than the blackbirds start eating the Apples and Pears. They seem to know exactly which are the softest or most forward, and if undisturbed will spoil the best of the fruit in a few hours. Jargonelle Pears are among the first to suffer, and Beurré d'Amanlis is another variety hard to preserve. Apples Irish Peach, Duchess of Oldenburg, Keswick Codlin, and Lord Suffield have already been attacked by birds, and those who have good crops of these, or indeed any other good Apples or Pears, will do well to net them over at once. Wall trees can be very simply covered. Pyramids, bush, and cordon trained trees will require to have a temporary framework erected over them to support the netting clear of the fruit. Especially is it necessary to net over such fine yet comparatively soft Apples as Peasgood's Nonesuch, Potts' Seedling, Queen, Cellini, Bismarck, and Blenheim Pippin. Pears are also liable to have small pieces pecked out of them by tomtits, and to ward off these either $\frac{3}{4}$ -inch mesh netting must be used, or the ordinary netting should be doubled and hung over the trees.

GATHERING AND RIPENING PEARS.—Pears evidently like plenty of moisture at the roots, the fruit being very fine this season. Doyenné d'Été and Citron des Carmes are best gathered and eaten direct from the trees, as they soon become dry and mealy after they are picked. Jargonelle is plentiful in many gardens. This again keeps badly, and in order to lengthen the season of this delicious variety it is advisable to gather a few before the seeds are become brown, wrapping the fruit in soft paper, and placing in gentle heat to ripen. More may be gathered and similarly treated about every four days, and in this manner every fruit will be utilised. Williams' Bon Chrétien, though scarce on trees in the open, is plentiful enough against walls, and this variety a few days later on may be treated similarly to the Jargonelles. It is the only way to prolong the season, as the fruit will not keep, and Souvenir du Congrès is very little better in that respect. Beurré d'Amanlis should be watched closely, as it ripens fairly early and will not keep long. Those who have large quantities of either of the four last named, or more than are required for home consumption, ought to market the

surplus rather than risk spoiling good fruit. Only sound and not very ripe specimens should be selected for the purpose, these being wrapped separately in soft paper and carefully packed, bruised or badly scratched fruit realising but poor prices.

EARLY APPLES.—Early Apples would appear to be the most plentiful this season, this remark applying to both dessert and culinary varieties. Plums being scarce there will be a greater demand for Apples, especially good dessert sorts, and a ready market will be found for all good surplus fruit. All the early varieties, including Margaret, Early Harvest, Early Julyan, Irish Peach, Beauty of Bath, and Devonshire Quarrenden are poor keepers, and are of the best flavour when eaten directly after they part freely from the tree. Early kitchen Apples, including Carlisle and Keswick Codlins, Duchess of Oldenburg, Lord Suffield, Hawthornden, and Stirling Castle, keep much better than the dessert varieties, and in this case thinnings ought to be used and also marketed if desirable. None should be gathered and stored before the seeds have browned or they part readily from the trees. If gathered too early premature shrivelling is the result.

THINNING SHOOTS ON FRUIT TREES.—In very many cases pyramid, bush, and half-standard trees are not pruned in any way till the winter, and then far too severely. The more vigorous trees are pruned in the winter the more dense the thickets of growth made, the crops being correspondingly light. Nor is it wise to closely prune in the summer, this quite paralysing the action of old trees especially, as well as any not treated liberally at the roots. Now is a very good time to go over the trees and freely thin out the shoots, leaving a few of the best placed their entire length. These thus favoured will mature properly, and if not interfered with next winter will most probably form fruit buds throughout their entire length during next year. This treatment soon alters the character of Apple, Pear, Cherry, and Plum trees for the better, and finer fruit in greater profusion usually results. Young Raspberry canes ought where at all crowded to be freely thinned out, and the old canes may well be removed at the same time.

STRAWBERRIES.—If not already done, the beds of these ought to be cleared of rubbish, and the runners, as well as the oldest of the foliage, trimmed off the plants and burnt at the same time. Well rooted runners have been obtained in abundance without much trouble this season, and it is not yet too late to move the strongest of these with a good ball of soil and roots and replant. During dry hot weather plants newly put out ought to be watered frequently, otherwise progress will be slow. See that all are firmly fixed in the ground, a sturdy growth, which this brings about, being most to be desired. Weakly runners put out at this date rarely attain a serviceable size before wintry weather sets in, and if they are planted where they are to remain they ought not to be allowed to fruit next season. Runners taken off now and planted about 4 inches apart in beds would be available for finally planting out next season, and the bloom being kept pinched out fine clumps will be formed during the growing season. Such plants are also admirable for potting.

FRUIT FORCING.

PEACHES AND NECTARINES. — *Earliest Forced Houses.* — Trees started in December and early January must not lack water at the roots. When this occurs the buds often fall instead of expanding when started. Afford water or liquid manure to weakly trees as may be necessary to maintain the soil in a moist condition. Needless waterings only saturate, sour the soil, and destroy the fibrous roots. This applies to artificial watering, as rain is accompanied by a lower temperature, and no harm results provided the borders are properly drained; indeed the ammonia and nitric acid of rain have a most beneficial tendency. Allow some laterals that are green and unripe to remain as an outlet for any excess of sap. They act as a safeguard against starting the buds, and promote the activity of the roots. Early-forced trees do not as a rule make strong growth, and there is often a preponderance of fruit over wood buds, hence in pruning it is not desirable to cut back next year's bearing wood unless the shoots are of great length. Very little pruning will be needed provided disbudding has been properly attended to, and no more wood been trained in than is necessary to replace the bearing shoots of the current year, and to renew worn-out growths. If the trees are enfeebled by long subjection to early forcing, and a rest cannot be given, they will be benefited by cutting out some of the old wood, especially the long branches, but this must be done judiciously, always having an eye to a crop. Some trees are the exact opposite, and those making too vigorous, long-jointed growth, should be restrained. This is not effected by stopping, though it is useful in causing a diversion of sap from the strong to the weaker parts of the trees, thereby assisting in an equal distribution of nutriment, consequently tending to maturity of the wood and buds. Any trees which grow too vigorously must be lifted and their roots laid in firmer material nearer the surface. Those showing symptoms of weakness may have the old soil carefully removed from amongst the roots, supplying turfy loam with an admixture of equal parts of steamed bonemeal and wood ashes. A bushel to a cartload of loam is a proper quantity, well incorporated. Give a good watering both to the lifted and replanted trees. These operations require to be performed as soon as the leaves have matured, but before they fall from the trees.

Trees Cleared of their Crops. — Cut away the shoots that have borne fruit unless required for extension, and where the growths are too crowded they should be thinned. This will allow air and light to harden the wood by increasing elaboration and storing assimilated matter in the buds and adjacent stems. It will also allow of the foliage being kept clean and healthy through freer access of water by the syringe or

engine, also, if necessary, the more efficient application of an insecticide for cleansing the trees of red spider, brown aphides, and scale. It is essential that the foliage be kept clean and healthy as long as possible. Water must be given as is necessary at the roots, but avoid needless applications, especially where the trees are vigorous and lifting is intended. Admit air to the fullest extent, especially at night.

Houses with Fruit Ripening.—A free circulation of air will enhance the quality of the fruit, and water need only be given to prevent the foliage becoming limp. Secure air moisture by an occasional damping of the house for the benefit of the foliage, also fruit, which in an arid atmosphere is liable to become mealy, whilst it ripens prematurely if the trees suffer by want of water. Ants are often troublesome. They take to treacle greedily. Bits of sponge held tightly in the fingers, then dipped in the syrup and there relaxed, will absorb some, and a gentle squeeze on withdrawing will leave enough in the sponge to entice the ants. These laid in their haunts will rid any place of the active creatures by immersing the sponges occasionally, with the ants in them, in boiling water. Cleanse the sponges each time and repeat the dipping.

Late Houses.—Trees which have the wood thin have a better chance to ripen, and the foliage to elaborate the sap, than those with the summer growths laid in so closely as to impede air and light. Upon the assimilation of the food depends its storing in the buds and wood for the support of the blossom and embryo fruit in the ensuing season. Gross growths tend to impoverish the weaker, appropriate an undue amount of sap, and tend to gumming and unprofitableness. They must be stopped or removed. An even spread of moderately strong short-jointed wood is desirable. Ventilate the house early in the morning, allowing a good heat by day, and closing so as to increase to 85° or more, for sun heat after evaporation has been going on for some time will not do any harm if care be taken to admit a little air before nightfall, and the temperature to gradually cool down, thereby securing rest. The night and early day ventilation tends to the solidification of the growth and its ripening. Syringe to keep down red spider.

VINES.—*Early Houses.*—Though the wood may be ripe and some foliage falling, there must not be any attempt at removing it, nor to cut the laterals close in, as that may cause the principal buds to start; therefore remove the laterals by degrees, and shorten some of the long shoots, preserving, however, some growth, especially when the leaves are down, above the buds to which the Vines are to be pruned, the final pruning being deferred until the early part of next month. The old surface soil should be removed and forked from amongst the roots, taking this advantage to raise any that are deep, and laying them in fresh material near the surface. Good calcareous loam is the most suitable, with an admixture of steamed bonemeal and wood ashes; about a thirtieth part is ample, or a good handful per square yard. If the soil be light add a sixth of clayey marl, or if stiff a similar proportion of old mortar rubbish. Give a moderate watering, and the roots will push from near the collar into the soil at once, and the Vines will be in capital condition for starting when the proper time comes round. When renovating or lifting is deferred until the leaves fall the start is not nearly so satisfactory.

Midseason Houses.—Fire heat is necessary when the Grapes are ripening to insure a circulation of air, and make high quality and finish certain. Air moisture is essential to the full swelling of the Grapes, and will not do any harm provided the atmosphere is not close. Good feeding is necessary. A supply of liquid manure and surface mulching of rather short yet dry material, to keep down superfluous moisture, is valuable for such varieties as Madresfield Court, one of the finest midseason Grapes. A rather low night temperature will assist Vines in carrying heavy crops.

Late Houses.—Full supplies of nourishment should be given until the Grapes are well advanced in colouring. Most late Grapes take a long time to perfect thoroughly, and some appear ripe when they are really not so, as is proved afterwards by their shrinking. All late Grapes require ample time for ripening. They ought now to be colouring, and then with a circulation of warm, rather dry air finish well. Afford a temperature of 70° to 75° by day artificially, 80° to 90° with sun, and close sufficiently early to increase to 90° to 95°. When the sun is losing power open the top and bottom ventilators to insure a circulation of air, and increase the ventilation early in the morning. A gentle warmth should be maintained in the pipes to prevent the temperature falling below 65°.

PLANT HOUSES.

Erica hyemalis.—Do not crowd these too closely together, or the lower foliage will turn brown and eventually fall. If thoroughly hardened, these plants are better standing on a bed of ashes outside in an open sunny position. Partially plunge the pots of the front row and the plants will afford sufficient shade to the others. Be careful they do not suffer by an insufficient supply of water. Keep the material moist on which they stand, and syringe the plants in the afternoon of dry days. Where they are protected in frames it is a good plan to raise these from the ground, so that a good circulation of air can play amongst the plants. The lights should be drawn off during the day.

Erica melanthra.—As these flower late they will now be in active growth, and should be kept in frames for some weeks. Encourage them to make their growth by closing the frame early in the afternoon. This species is benefited by this treatment, and is not liable to be attacked by mildew. Give plenty of air during the day, syringe morning and evening in dry weather, and give liberal supplies of water. If any of these plants need repotting it should be done at once. Do not disturb the old soil further than is necessary to remove the drainage; press the soil,

peat and sand, firmly, and give water with caution for some time afterwards. A light shade over the frame during the hottest part of the day will prove beneficial.

Azalea amœna.—Plants that were assisted to make their growth early, and have been gradually hardened by abundance of air and exposure to light, may be stood outside. If the plants have been growing under Vines and Peaches thin tiffany should be arranged so as to shade them for a few hours during bright sunshine, or the foliage will be unduly browned by sudden exposure. Protect the front row of pots, the same as advised for *Ericas*. Syringe the plants freely, and do not allow them to become dry at their roots.

Epacris.—Those that flowered early and were assisted into growth by gentle warmth, will be sufficiently advanced for standing outside, so that air and sunshine may ripen their growths, for upon this depends whether they flower profusely or the reverse. Do not turn them out before the plants have been carefully prepared by exposing them to the sun. Plants in active growth should still remain in frames, and be pushed forward by early closing in the afternoon, and syringing at the same time. Air should be admitted freely during the day, so that their growths are sturdy and strong. A too confined atmosphere soon draws them up weakly.

Camellias.—When these have completed their growth syringing should be stopped for a time until the flower buds are set. Plants in vigorous growth if kept close and moist are liable to start again into growth; this can be prevented by the admission of more air, a drier atmosphere and the gradual exposure of the plants to light. The latter is most important where strong growth has been made, for if not thoroughly matured the flower buds may fall prematurely. Plants that are swelling their buds should be kept moist at the roots and syringed freely. If confined in pots or narrow borders stimulants may be given. If these plants are placed outside they must have a position where they will receive partial shade, and must be well watered, also syringed during bright warm weather.

Primula obconica.—The earliest plants may be placed in 5-inch pots and stood in a shady corner outside. Bright sunshine is detrimental to their well being. Later plants may be potted; they need more room, and to be kept in frames that have a northern aspect.

Lilium candidum.—Where these are appreciated in pots, imported bulbs should be potted as soon as they can be received. Large bulbs may be placed singly in 6-inch pots, or three or four may be placed into 10-inch. Drain the pots liberally, and pot in a compost of good loam, one-seventh of decayed manure, and sand. The bulbs should be covered with about 1 inch of soil. Stand the pots outside or in cold frames until growth commences.

Gladiolus The Bride.—Where a number of bulbs have been flowered in 5-inch pots and stood outside for the past few weeks they should be placed at once into pots 2 inches larger. Remove the drainage, and pot them without disturbing their roots. Plunge the pots and just cover the rim with ashes. They can remain in this condition until October, when the corms will have commenced growth, and the plants may be removed to the greenhouse.

Kalosanthes.—Plants that have flowered may be cut back and placed in frames to break, when they should be repotted. Shoots that have not flowered may be rooted singly in small pots, or a number placed together in 5 and 6-inch pots. These plants, if rooted quickly and then fully exposed to light and air, will flower freely another year. If wanted only for the season following, root them singly, and then remove the point to induce them to branch. Plants cut back last season should be placed outside fully exposed to the sun to ripen, which will induce every shoot to flower freely.

Veronica Andersoni variegata.—Young shoots of this variety may be inserted thickly together in pots and placed in the propagating frame; they will soon root, and will be found useful in small pots for furnishing during the winter. This plant grows quickly, and for the purpose in question should not be stopped.

Begonia manicata.—This species, and *B. hydrocotylifolia*, which for conservatory decoration is the more useful of the two, should be placed, if not already done, into 5 and 6-inch pots, their flowering size. They do well in a mixture of loam, one-third leaf mould, one-seventh of Mushroom bed refuse and sand. Place them in cold frames, where they will be perfectly safe until the end of September. Shade them lightly from the sun.

Begonia Ingrami.—Place a number of plants in 5-inch pots and grow them cool. Cuttings may also be inserted singly in small pots. Strike cuttings also of *B. semperflorens*, *B. carminea*, *B. rosea*, as well as *B. nitida* and its rose coloured form.

Euonymus latifolius variegatus.—This is equally as ornamental in the greenhouse or conservatory during the autumn and winter as the *Croton* is in the stove, and plants of various sizes may be used with effect. Low standards on stems from 1 foot to 18 inches high are very useful. Cuttings of young wood should now be inserted thickly together in pans of sandy soil, well watered, and then placed in a cold frame where they can be shaded from the sun. Nearly every one will root in this position, and may be potted singly early in the year. They can be rooted in heat, but are less certain, and entail more than double the labour. By rooting a few annually there need be no deficiency of stock.

Ivy-leaved Pelargoniums.—Young plants intended for autumn and winter flowering that have been rooted late and are now only in 3-inch pots should be placed in 5-inch, gradually hardened, and stood outside, where they will make firm sturdy growth, and in due time flower profusely.

THE BEE-KEEPER.

APIARIAN NOTES.

THE WEATHER.

A DECIDED improvement has taken place, the temperature having risen considerably. History has it that our parish is a cold one. One thing is certain—namely, that we have been in the track of storms the whole summer, and I observed that the severe gales at times covered a narrow field. Some days the temperature never rose with us above 58° Fahr. with a strong wind, a leaden sky, and not a bee ventured abroad. In the beginning of April we had several serene days, but none since; and no better proof of this, to those who were not present, is, after the summer is past, a large per-centage of young queens are still sterile.

WEIGHING HIVES.

We have been defeated in our intention of comparing the gathering of different races of bees by colonies of great strength, but the day is fine, and bees appear to be working well. We must be careful neither to deceive others nor ourselves. A Punic stock is suspended upon a balance; it rose in weight 3 lbs. upon the 25th July, and 1 lb. on the 28th; in two "rushes" of one and a half hour 3 lbs. of bees left the hive to gather honey. Out of the 4 lbs. gathered, after evaporation 1 lb. only remained. This working for little or nothing wears out the bees in a short time, and is on a par with spring stimulative feeding, and, what is worse, the old practice revived of feeding outside with syrup.

PREPARING FOR WINTER.

Those bee-keepers situated south of the Tweed may not have the same difficulty to contend with in the want of young fertile queens as we have. Owing to the temperature being higher in England unmated queens will be fewer in number, and where these are breeding may be encouraged longer than where the queens of last year are still regnant. Where bees are numerous enough in the hive during August, it is unnecessary and inadvisable to encourage breeding. It exhausts the queen, and often great numbers of eggs are deposited that are never hatched; and encouraging queens to lay which have done duty since January is courting failure, as queens over-bred are liable to be deposed in spring, when it is impossible to get them replaced. Queens have laid an unusually large number of eggs this season, and already I hear that many queens have been deposed. If it were not for the Heather I should at once finish up my hives for the year without further disturbance. A queen that might continue laying till swarming time by giving her the necessary repose now, runs a greater chance of being deposed in March or April, if laying now be encouraged.

EARLY AND LATE SITUATIONS.

Our system of management is alike for all districts, and our hives suit both. Late districts are more unfavourable to tiding over hives with queens that have done much laying than earlier ones, but weaker hives may be brought up to the standard of strength at less expense than the former. In early districts it is necessary, if profit is to be expected, to go into winter quarters with strong hives and youthful queens, so that breeding may be started early and maintained till the flowers and honey appear. In fine seasons late districts have greater advantages than early ones, especially where Heather abounds, but there is more wear and tear of bee and queen life. In neither case is it advisable to keep other than fertile queens of the current year.

YOUNG AND OLD QUEENS.

I have had queens do good service for three, four, five and even six years, but I have had too many losses of queens above a year old dying at a time they could not be replaced, or failing to fill a proper sized hive with sufficient bees to be profitable, to recommend queens a year old or upwards to be kept as stocks. I

may be compelled to keep a number of last year's queens, but I shall take care that they are neither stimulated nor kept in too large hives, so that early swarming will be encouraged. But the large sized hives I have had so long will be the only ones employed as non-swarmers. I am writing this on 1st August, the mildest day we have had this year, and a queen nine weeks old has this day become fertile, and I doubt not others will have shared the same fate, so that bee-keepers may yet have all their stocks in a normal state for 1891 and headed by young queens.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

Wm. Paul & Son, Waltham Cross.—*Catalogue of Bulbs and Winter Flowers.*

Dicksons & Co., 1, Waterloo Place, Edinburgh.—*Catalogue of Flower Roots.*

W. Cutbush & Sons, Highgate, London.—*Descriptive Catalogue of Hyacinths, Tulips, and other Bulbs.*

John Laing & Sons, Forest Hill, London, S.E.—*Descriptive Catalogue of Bulbous Roots, Fruit Trees, Roses, Begonias, &c.*

James Veitch & Sons, 544, King's Road, Chelsea, London, S.W.—*Catalogues of Hyacinths and other Bulbous Roots, and Fruits.*

Vilmorin, Andrieux, et Cie., 4, Quai de la Mégisserie, Paris.—*Catalogue of Bulbs, Flowers and Strawberries.*



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Auricula Treatise (H. S.).—A very good treatise on the Auricula, by the Rev. F. D. Horner, Lowfields, Kirkby Lonsdale, is published, with articles on other flowers, in a small work for amateurs, but we do not remember its price nor the address of the publishers. Mr. Horner will doubtless give you the information if you write to him and enclose a stamped addressed envelope for the reply.

Strawberries in Light Soil (C. J.).—If the soil is made firm before planting and it is mulched with manure, and the surface further thickly covered with straw or other littery material as soon as the plants commence flowering, to keep the ground cool and moist, you may succeed in your object. Three suitable varieties for your purpose are Vicomtesse Hericart de Thury, President, and Waterloo.

Pansies Failing (E. C.).—It is not always the fault of the soil when Pansies "go off" in the manner you describe. Many failures are the result of too late and shallow planting. When the soil is in fault heavy applications of lime have proved beneficial, and you cannot err by using as much fresh loam as you can obtain, incorporating with it some friable cow manure and wood ashes.

American Blight (J. R.).—Your trees are infested with this insect. Syringe them with a strong solution of softsoap, 6 ozs. of soap being dissolved in a gallon of water, to which may be added half an ounce of petroleum. A solution of nicotine soap of the same strength will also destroy the pest. In the winter, scrub the trees with brine, applying also petroleum with a brush to those parts where the insects most abound, but not dressing the smooth bark of the trees with the oil, or it may seriously injure the trees.

Gladioluses Dying (Medicus).—They are, we fear, attacked by the disease that is often so destructive to these flowers. We know of no remedy, and we can only suggest that you procure healthy corms from a fresh source, and keep them separate from your own stock, and also plant them in a fresh place. The disease appears more pronounced in rich highly manured soil than in ground well worked and sweetened, but only moderately fertile in character.

Walnut Trees not Bearing (H. T. H.).—When free bearing trees of good varieties are desired seedlings should be grafted when young with such varieties. Seedlings are extremely variable both in respect

to the time of bearing and the character of the produce. We should be inclined to allow the sixteen-year-old trees to bear, to test the quality of the nuts. You say the heads are "bushy;" if very dense thin out some of the branches, but do not shorten those retained, dig a trench round the trees, and cut several of the roots for checking exuberant growth.

Trees for Orchard House (E. D. N.).—Peaches and Nectarines potted as maidens commence bearing the second year when well managed, and improve yearly with judicious treatment. The leading fruit nurserymen specially prepare trees for growing in pots, and you had much better purchase such trees than attempt growing your own. Healthy young trees may be removed from the garden into the orchard house, and if the transplanting is carefully done early in the autumn just as the foliage commences changing, a moderate crop may be taken the following year, but everything depends on the condition of the trees and the treatment to which they are subjected.

Cropping Strong Soil (Borton).—The soil may be improved by ridging it in the autumn and breaking up the ridges two or three times during the winter when they are crustled with frost. Ashes and gritty matter of any kind should also be mixed with it in as large quantities as can be obtained, and the soil will in due time be improved considerably. Such soil generally suits Cabbages, Broccolis, Kales, Savoys, &c., well; also Beans, late Peas, Rhubarb, Strawberries, Raspberries, and bush fruits generally, but special care is needed in sowing and planting so as to enable the crops and trees to obtain a good start. This work must only be done in fine weather, the soil in contact with the seeds and roots being made as fine as possible. Soot is a good manure for such soil.

Faulty Mushrooms (S. L.).—It is not all uncommon for Mushrooms to be lacking in juiciness and flavour at this period of the year; indeed they are bound to be inferior, if not grown in cool places and kept moist with the aid of damp coverings. If the beds are too dry and position too warm, they are tough and insipid, and they are also liable to become infested with maggots. Very good Mushrooms are grown on outdoor beds in shaded positions in summer, if well covered with litter, and this is frequently sprinkled, as the temperature is then lowered by the process of evaporation. July and August are the most unfavourable months for the growth of Mushrooms, and the best time for commencing their culture is clearly stated on page 104 of Wright's "Mushrooms for the Million," (sixth edition) post free from this office for 1s. 2d.

Fig Tree Unfruitful (Inquirer).—The cause of the tree casting its fruit is unquestionably imperfect fertilisation, which usually arises from a deficiency of calcic and silicious matter in the soil in a soluble state. This can be afforded in various ways, but the most effectual is the addition to the soil of old mortar rubbish, whereby nitrate of lime is afforded, and surface dressings of short rather fresh manure, which whilst affording organic matter or humus, also supplies soda. We advise a trench to be taken out half the distance from the stem that the tree has spread of branches, going so deep as to detach all roots, and remove some of the soil from amongst the roots towards the stem. Then procure fresh soil, to which add one-sixth of old mortar rubbish, and fill up the trench—good loam with the old mortar rubbish added answering very well. The roots should be disposed evenly in the material, and made firm. It may be done so soon as the leaves commence falling, following with a covering of rather littery manure a foot farther than the roots extend outwards from the stem, and about 3 inches thick.

Red Spider on Apple Trees—Pears Spotted (D. J. A.).—Red spider is usually most prevalent on trees in dry soils and in dry seasons. Give the trees a good soaking with liquid manure, or apply a mulch of short rather lumpy material, and water thoroughly if the weather be dry. Syringe the trees with a solution of soft soap at the rate of 2 ozs. to a gallon of water, choosing a calm evening, and directing the solution against the under side of the leaves. This will destroy the acarus, but should be repeated in the course of a few days, as other generations will be hatched. The application of the soap solution should be followed within twenty-four hours by a thorough cleansing with clear water, allowing the solution, however, to become dried before applying the water. The black spots on the Pears are caused by a fungus (*Cladosporium dendriticum*). Fruit so infested usually cracks, and is worthless. It is generally considered that lifting and planting in fresh firmer soil with an admixture of old mortar rubbish, so as to encourage healthier growth, is the best palliative, but there is no question of the fungus causing the disease, which would probably be overcome by phosphatic manures, and might be destroyed by a weak solution of sulphate of iron, one part to ninety-nine of water, applied occasionally in the early stages of the fruit growth. That, however, is matter for experiment, and a light dressing to the soil might act beneficially. Half an ounce per square yard is a full quantity to apply, a quarter of an ounce being safer.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*Thropton*).—*Dictamnus Fraxinella*. (*J. E.*).—1, *Campanula fragilis*; 2, *Harpalum rigidum*; 3, *Lilium tigrinum*; 4, *Monarda didyma*. (*G. S.*).—*Stenactis speciosa*. (*Oxon*).—*Francoa appendiculata*.

COVENT GARDEN MARKET.—AUGUST 13TH.

MARKET getting quiet; supplies of soft fruit falling off; hothouse goods lower.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, $\frac{1}{2}$ sieve	0	0 to 0	0	Grapes, per lb.	1 3 to 3 0
" Nova Scotia and	0	0	0	Lemons, case	10 0 15 0
" Canada, per barrel	0	0	0	Melons, each	1 0 2 0
" Tasmanian, p. case	0	0	0	Oranges, per 100	4 0 9 0
Cherries, per $\frac{1}{2}$ sieve	3	6	10 0	Peaches, dozen	1 0 8 0
Currants, Black $\frac{1}{2}$ sieve	7	0	0 0	St. Michael Pines, each ..	2 0 6 0
" Red, $\frac{1}{2}$ sieve	4	6	0 0	Strawberries, per lb. ..	0 2 0 6

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes, dozen	0	0 to 0	0	Mushrooms, punnet ..	1 6 to 2 0
Asparagus, bundle	0	0	0	Mustard & Cress, punnet	0 2 0 0
Beans, Kidney, per lb. ..	0	3	0 0	Onions, bushel	3 0 4 0
Beet, Red, dozen	1	0	0 0	Parsley, dozen bunches	2 0 3 0
Brussels Sprouts, $\frac{1}{2}$ sieve	0	0	0 0	Parsnips, dozen	1 0 0 0
Cabbage, dozen	1	6	0 0	Potatoes, per cwt.	3 0 4 0
Carrots, bunch	0	4	0 0	" New, per lb.	0 0 0 0
Cauliflowers, dozen	2	0	4 0	Rhubarb, bundle	0 2 0 0
Celery, bundle	1	0	1 3	Salsify, bundle	1 0 1 6
Coleworts, doz. bunches	2	0	4 0	Scorzonera, bundle ..	1 6 0 0
Cucumbers, doz.	2	0	3 6	Seakale, per bkt.	0 0 0 0
Endive, dozen	1	0	0 0	Shallots, per lb.	0 3 0 0
Herbs, bunch	0	2	0 0	Spinach, bushel	1 0 2 0
Leeks, bunch	0	2	0 0	Tomatoes, per lb.	0 3 0 5
Lettuce, dozen	0	9	1 3	Turnips, bunch	0 4 0 0

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ..	2	0 to 4	0	Maidenhair Fern, dozen	4 0 to 9 0
Asters, per bunch, French	0	9	1 0	bunches	4 0 to 9 0
" English, 12 bnchs. ..	3	0	6 0	Mignonette, 12 bunches ..	2 0 4 0
Bonvardias, bunch	0	6	1 0	" Fr., large bnch ..	0 0 0 0
Carnations, 12 bunches ..	4	0	6 0	Pansies, dozen bunches ..	1 0 2 0
" 12 blooms	1	0	2 0	Pelargoniums, 12 trusses	0 9 1 0
Calceolarias, doz. bunches	4	0	6 0	" scarlet, 12 bnchs ..	3 0 6 0
Cornflower, doz. bunches	1	6	3 0	Pinks (various), doz. bnchs	3 0 6 0
Dahlias, dozen bunches ..	3	0	4 0	Primula (double) 12 sprays	0 6 1 0
Eschscholt in, 12 bunches	2	0	4 0	Ranunculus, doz. bunches	0 0 0 0
Eucharis, dozen	4	0	6 0	Roses (indoor), dozen ..	0 6 1 6
Forget-me-not, doz. bnch.	1	6	4 0	" Moss (Eng.), 12 bnch.	6 0 13 0
Gardenias, 12 blooms ..	2	0	4 0	" Red (Eng.) 12 bnch.	2 0 6 0
Iris, various, dozen bnchs.	0	0	0 0	" Red, 12 blooms ..	1 0 2 0
Lapageria, 12 blooms ..	2	0	4 0	" Tea, white, dozen ..	1 0 3 0
Gladioli, 12 bunches ..	4	0	9 0	" Yellow	2 0 4 0
Gypsophila, per bunch, Fr.	1	0	1 6	Stocks, dozen bunches ..	3 0 6 0
Lilium, various, 12 blms.	0	6	1 0	Sweet Peas, 12 bunches	2 0 4 0
" longiflorum, 12 blms.	2	0	4 0	Tuberose, 12 blooms ..	0 3 0 9
Marguerites, 12 bunches	2	0	6 0		

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, dozen ..	6	0 to 12	0	Geraniums Scarlet, p. doz.	3 0 to 6 0
Arbor Vitæ (golden) doz.	6	0	8 0	Heliotrope, per doz. ..	4 0 8 0
Azalea, various, per dozen	0	0	0 0	Hydrangea, doz. pots ..	9 0 18 0
Calceolarias, per doz. ..	6	0	9 0	Lilium laucifolium, doz.	9 0 18 0
Climbing Plants, various,				" longiflorum, doz. 13	0 24 0
dozen pots	4	0	9 0	Lily of the Valley, 12 pots	0 0 0 0
Crassula, per dozen ..	9	0	24 0	Lobelia, per doz.	3 0 4 0
Cyclamen, per dozen ..	0	0	0 0	Marguerite Daisy, dozen	6 0 12 0
Deutzia, 12 pots	0	0	0 0	Mignonette, per dozen ..	4 0 6 0
Dracæna terminalis, doz.	24	0	42 0	Musk, per dozen	2 0 4 0
" viridis, dozen	12	0	24 0	Myrtles, dozen	6 0 12 0
Epiphyllum, per dozen ..	0	0	0 0	Nasturtiums, dozen pots	3 0 4 0
Erica, Cavendishi, per pt.	0	0	0 0	Palms, in var., each ..	2 6 1 0
" various, dozen	12	0	18 0	Pelargoniums, per doz. ..	6 0 12 0
Euonymus, var., dozen ..	6	0	18 0	Rhodanthe, per dozen ..	4 0 8 0
Evergreens, in var., do en	6	0	24 0	Saxifraga pyramidalis,	
Ferns, in variety, dozen ..	4	0	18 0	per dozen	0 0 0 0
Ficus elastica, each ..	1	6	7 0	Spiræa, 12 pots	0 0 0 0
Foliage plants, var., each	2	0	11 0	Stocks, per doz.	4 0 6 0
Fuchsia, per doz.	4	0	9 0	Tropeolums, various, per	
Geraniums, Ivy, per doz.	3	0	6 0	dozen	3 0 6 0



PROFITABLE FORAGE PLANTS.

EVERY season has its special lessons, and among those of this year the full growth of forage plants is very remarkable, affording an opportunity as it does for a comparison of bulk of crop, which may be turned to account subsequently; for in such a wet summer we see much of what is possible in the growth of such plants, and full recognition is given to the superiority of the best, if only they are seen under cultural conditions favourable to that full development which is now possible.

Of herbage for dairy cows we have certainly nothing better than Cocksfoot. See it now among the aftermath in pasture where it predominates. How rampant and free is its tender succulent growth! How fond the cows are of it! and how quickly it springs up again and again however closely they crop it off! For the tenant farmer such a grass is invaluable, as it is certain to repay him for high cultivation, and to afford a quick return upon his outlay for

seed and the preparation of the seed bed. No grass is more suitable for heavy land. We have a magnificent crop of it now upon a clay farm in Essex, and in the deep rich Suffolk loams we have had it upwards of 4 feet high—so high, in fact, as to hide the men mowing it with scythes from view. It is as nutritious as it is vigorous, and we have no doubt that many a heavy land farmer whose dependance on corn alone brought him to bankruptcy in “the eighties,” would have met hard times well enough had he had a fair proportion of his farm down in this and a few other robust sorts of grasses and Clovers.

Timothy is another good heavy land grass which has been exceedingly vigorous this season, reaching a height of nearly 4 feet in a moderately fertile pasture, and contributing very much to the bulk of our hay crop. The aftermath is good, but is decidedly inferior to that of the Cocksfoot. Under really high cultivation it should be as vigorous in this country as it is in the United States, where Mr. Martin J. Sutton tells us it has attained a height of 6 feet. It is deservedly popular with farmers in the States, and it is doubtless owing to the fact of its culture there as a special crop that our American visitors recognise it so quickly. Ignorance of the best forage plants is so general in this country that we wish it were customary to have separate fields of Cocksfoot and Timothy as well as other grasses, just as we do of Rye Grass, so that farmers might become as familiar with them as they now are with different sorts of corn.

Italian Rye Grass is sown alone, but we have met with some faulty practice in its cultivation, though indeed it answers well enough if allowed to stand only one year; but it holds plant so well in the second year that it ought always to be kept over. It is such a gross feeder that not only should it have a rich seed bed, but frequent top-dressings where sewage cannot be had for it. In the present season exceptionally heavy crops of it have been obtained by a free use of chemical manure as a top-dressing immediately after each mowing. In a dry summer very much may be done by the application of liquid manure by means of a water cart and spreader; the more thorough the watering the more bulky the crop. Top-dressings of stable sawdust saturated with urine answer well, too, and serve in a great measure to exclude drought from the soil.

To complain that this grass and others of robust growth exhaust the soil, is a tacit acknowledgment of bad husbandry. Of course they are exhaustive, but then it is our affair to keep up the supply of food in the soil for crops which afford such a splendid return upon our outlay and labour. There are such things as proportion and balance in farming, and we cannot afford to ignore them. What is the storage of the soil with fertility and the growth of a full crop but simple cause and effect? A letter from a New Zealand farmer in *Bell's Weekly Messenger* shows that Cocksfoot is in high favour with farmers in that country, where it is grown alone, especial care being taken to have it pure. To ensure this the seedlings are often transplanted, the plants being set 18 inches apart, and so vigorous is the growth that when the plants are fully grown this distance, we are told, is not by any means too great. The mass of leafy nutritious herbage from such huge plants must be enormous, and a field so treated must be a remarkable sight, and the crop exceptionally profitable.

WORK ON THE HOME FARM.

The change to fair summer weather which set in at the beginning of the month has brought on the corn so fast that harvest is now in full swing in the southern counties, and on the whole it bids fair to realise our estimate of a yield of general abundance. The improvement in Oat cultivation is evident in the heavy crop, which is much above the average. Much of the best corn is beaten down and twisted by wind and rain, and much care is required in using the reaper. A clean upstanding field of forward Oats has been reaped by the self-binder, but some other fields so much laid that the straw is in very unequal condition, will be mown, left unbound, and be turned once or twice before the carting, both to ripen the straw and prevent overheating in the stack.

Winter Oats are now nearly out of hand. As usual we had them carted direct from the field to the threshing machine, and the straw was

cut into chaff immediately after the threshing. The chaff fills a barn-head at each farm, a little salt was sprinkled on each layer, it was well tramped, and will come into use whenever it is wanted.

Light ploughs drawn by a pair of horses, and managed by stout boys, will be in constant use during harvest to turn up the stubbles as soon as the fallen corn is cleared off by pigs and sheep. Foul stubbles are numerous this summer, and the ground is soft enough to admit of the free use of broadshares to pare the surface sufficiently and cut up all weeds. Light harrows should follow at once to clear off as much of the weed growths as possible, and to mingle fallen weed seeds with the soil so as to induce speedy germination. Then when the ploughs follow the new growth of weeds is buried, and a tolerably clean seed bed ensured next spring.

Pigs out on stubbles should always have water at midday. Sows out on grass require very little other food now, but it is as well to keep a watchful eye upon them, and not allow them to become too low in condition. It is a good rule never to suffer a breeding animal of any sort to show poverty of condition, for this is an evil for which farmers have to pay eventually.

THE HESSIAN FLY.—Information is published by the Board of Agriculture concerning the Hessian fly now infesting Wheat and Barley plants in some parts of England and Scotland, and as to the measures calculated to prevent its spread. The puparia are of a brown colour not unlike the colour of a Horse Chestnut, and somewhat like linseed, and may be found now in the joints of Wheat and Barley plants in infested fields. Wheat and Barley stubble in infested localities should, as far as practicable, be ploughed at once after harvest, and skimm-coulters used to bury the stubble completely. Upon “seeds,” the stubble should be rolled or beaten down, horse-raked, carried away, and burnt. In infested districts Wheat should be sown as late as possible, in order that the autumn brood of flies may not find plants to lay their eggs upon. Self-sown, or “volunteer” corn plants, should be cut off in, or near to, infested fields, that eggs may not be deposited upon them. Where Wheat and Barley crops are infested, after these are threshed out, whether this is done in the fields at harvest time, or in the stack yards or barns later on, all the screenings and short refuse from the screens, and particularly the fine screenings, should be burnt at once. Tail Wheat should be carefully examined and run down again if the chestnut-coloured puparia are found in it. It would be advisable not to sow winter Barley and Rye near infested fields.

AUSTRIAN AGRICULTURE.—In connection with the International Exhibition of Agriculture and Forestry which is being held at Vienna this summer under the patronage of the Emperor of Austria, an International Congress of Agriculturists will be held in the University Buildings from the 2nd to the 6th of next month, under the presidency of Baron Arthur von Hohenbruck, of the Austrian Ministry of Agriculture. Members of the Congress will have the opportunity of inspecting, under skilled guidance, some of the most striking agricultural establishments in the empire. Inspections are being organised of estates in Moravia, Bohemia, Lower Austria, Silesia, and Hungary, including the State Stud Farms of Kisber, Stuhlweissenbourg, and Mezohegyes. The offices of the Organising Committee are 1, Herrangasse, 13, Vienna; but copies of the programme may be had in this country on application to the Royal Agricultural Society of England, 12, Hanover Square, to be officially represented at the Congress by their Secretary and Editor, Mr. Ernest Clarke.

POULTRY IN FRANCE.—The following statistics have been collected for the French Department of Agriculture. The income derived by French people who rear fowls, according to octroi and market returns, is 337,100,000 francs, of which 153,500,000 francs represent the value of the flesh and 183,600,000 francs that of the eggs. The quantity sold in poultry yards is immense, as is also the number used in the homes of those who rear fowls. These figures do not find their way into statistics.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.
Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain
1890. August.	Barome- ter at 32° and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min.	In sun.	On grass		
Inches.	deg.	deg.	E.N.E.	deg.	deg.	deg.	deg.	deg.	In.		
Sundday	3	30.179	62.2	57.0	E.N.E.	62.0	73.3	51.3	113.9	48.4	—
Monday	4	30.233	65.5	60.4	W.	62.2	75.8	55.3	120.0	54.0	—
Tuesday	5	30.219	65.5	61.7	S.	62.9	79.7	54.2	119.4	51.9	—
Wednesday ...	6	30.116	64.1	59.3	W.	63.6	79.2	54.7	116.8	51.7	—
Thursday	7	30.181	60.1	57.8	E.	64.9	72.9	57.1	111.8	54.9	—
Friday	8	30.152	61.8	53.1	N.E.	63.8	67.7	49.8	91.6	46.8	—
Saturday	9	30.038	66.1	57.3	N.E.	62.8	69.6	56.1	89.9	55.2	0.228
		30.160	63.0	58.5		63.2	71.0	54.1	109.5	51.8	0.228

REMARKS.

3rd.—Fine and warm; lovely evening.
4th.—Dull morning with spots of rain; but brilliant from 11 A.M.
5th.—Bright throughout.
6th.—Bright and warm.
7th.—Cloudy and dull early; fair day; some sunshine in afternoon.
8th.—Cloudy and cool day; drizzle in evening.
9th.—Dull and drizzly early; cloudy day, but one or two gleams of sun in afternoon.
Pleasant summer weather except on the last two days. Temperature about 3° above the average.—G. J. SYMONS.



A FEW years ago when on a visit to Mr. Cannell he took me into a field near Swanley Station, and asked me what I thought of it for growing fruit. It resembled a gravel bed as much as anything, only able to grow weeds, and these badly, for a few alone of the deep rooting kinds, such as Decks and hard wiry-looking grasses, were to be seen, as if struggling hard for existence. It appeared as if not worth cultivating, and was not cultivated but neglected. It may be safely said that for agricultural purposes a farmer would not take such land at a rental of 5s. an acre. Mr. Cannell does not always wait for an answer to one question before he asks another. He is a busy man, and cannot always tarry for responses from persons slow of speech; and before I could answer him he continued, shifting his question from the land to its new owner, "Shouldn't you consider a man who bought this land for fruit growing crazed?" Luckily my interlocutor could not pause, and went on to say, "Philip Ladds has bought it; a remarkable man, very remarkable, he is indeed; and he has thirty tons of glass on the station platform now for vineries and Peach houses, and if you come in three years' time you will find them full of fruit. Mark my words, he will make it pay; he makes everything pay; buys the worst land, and gets the best crops; very remarkable, but it's true; come and see." "Come and see" is a familiar Swanley motto, and those who accept the invitation, and especially those who were acquainted with the district twenty years ago, and inspect the "Home of Flowers," Mr. Ladds' establishment on the field of gravel, and Mr. Wood's jam manufactory, will witness in the trio such an example of industrial enterprise in horticulture as will astonish when the old order of things are remembered. To say that a thousand pounds' worth of produce is raised and sold where only half a hundred pounds were realised before does not adequately represent the advance. It is nothing less than marvellous, and shows what can be accomplished by men of enterprise, resource, energy, judgment, and ability. Mr. Cannell's words were true. Three years after inspecting the barren, impoverished-looking field I had the pleasure of seeing tons of Tomatoes, Strawberries, and Grapes, and hundreds of tons have since been raised and sold from a site that ninety-nine out of a hundred gardeners would have regarded as worthless, and the man who was so bold as to invest in it as "crazed."

On one of my visits I asked Mr. Ladds what induced him to secure the land that looked so unpromising. I knew there must be a reason, for men who achieve brilliant successes do not act without thinking. "Well," he replied, in his quiet way, and pointing with his finger, "do you see that tree?" This was a splendid Oak standing alone and majestic—and he continued, "Do you think land with nothing in it could grow a tree like that? I know it couldn't; and it was that tree which I took as my guide. And another thing, you can't poison land like this with muck, but can feed it well and it is always sweet, and that's the sort to grow fruit in." So it has proved very conclusively. "Philip" has fed the land lavishly, and drawn from it abundantly, and without any doubt the property is worth a hundred times more than when he secured it, and I should be very much surprised to learn that it has not increased in value five hundredfold. As Mr. Cannell says, it is all "very remarkable." Here is a man who started with a basket, worked till he was the proud possessor of a barrow, then

aspired to a cart, next to a van, and now takes pride in the best hunters that money can buy—all done in a generation—and he is the same plain unassuming man he was when he started on his industrial career some thirty years ago.

We will now pass from Kent into Surrey, and glance at the progress that has been made by another busy worker in the hive of horticulture—one who came from Scotland fourteen years ago, and like the famous warrior of old, "came, saw, and conquered"—Mr. James Walker of Daffodil fame, whose new field of labour at Ham Common I have lately had the pleasure of inspecting. Mr. Walker was an amateur florist when he arrived in the south, full of zeal, but tempered with prudence and the cool sound judgment that is characteristic of the race to which he belongs. He had a desire to engage in commercial horticulture, and to this end took the wise course of closely examining what others were doing, and of becoming acquainted with the manners and customs of the trade at the great emporium, Covent Garden Market. He endeavoured to ascertain the growing taste of the public, so that he might cater the better for it, and therefore for himself. He sought out the fields of production, and eventually leased land at Whitton. He noticed the increasing demand for Daffodils, and prepared to meet it, and was not long before he was able to purchase nearly a thousand pounds' worth of bulbs in one season. The more flowers he grew—grew well, be it understood, and placed in the market in the best condition—the greater was the demand, and this he could only meet by growing them in millions and by the acre. With care and good culture his bulbs increased enormously, and from a grower of flowers for market he grew into a wholesale vendor of bulbs. Strongly convinced that hardy bulbs could be grown at home as well as abroad, he set himself to the work with quiet pertinacity, and the result is that he can now supply the Dutchmen better than the Dutchmen can supply him with certain kinds. He executes orders of 100,000 at home and abroad, and could sell Daffodil and Narcissus bulbs by the ton if required and the terms were right.

His lease approaching termination he looked about him for another field to which he might migrate. His eye fell on a farm of nearly 140 acres at Ham Common, sandy poor-looking land, wild with weeds. He satisfied himself that the impoverished and weed-infested land was deep, and that being so conceived that labour and manure could be profitably invested in it, and to secure this land paid I dare not say how much for the practically worthless crops that were in it. Very accommodating sort of land he regards it, free to work, and so deep that when the sand is pushed aside in the driest weather moisture is found, while if the rain it raineth every day it passes down freely, and there is no stagnation. Shrewd, observant, calculating, Mr. Walker has re-established himself, and has evidently faith in the future, or he would not have erected the bulb stores and splendid ranges of glass, nor planted fruit trees so extensively. He is a strong believer in bulbs and fruit, and is convinced that both can be grown at home as good in quality as can be imported, and at prices remunerative to the cultivator. He has found that Daffodils yield two crops—the flowers above ground and bulbs below, and also that they profitably occupy the land between his fruit trees; and if all these had been Lord Grosvenor Apples, as many are, they would this year have afforded him nearly 10s. worth of fruit per tree four years after planting.

But to revert to the bulbs. At the time of my visit, a fortnight ago, ten men were digging them, and had been digging for weeks. They are probably digging yet, for the work is somewhat tedious, and the extent of ground occupied considerable. You see acres of weeds—land apparently lying waste, but it is full of money—bulbs. The weeds are not considered to do harm, but rather good in shading the soil, and every time the fork is turned over, or rather every other time, out the bulbs come in clusters. The men are expert at the work and know exactly how deep to dig to turn the crust and reveal the necks of the Daffodils, and the

next action of the fork brings them out. They are spread in rather thick heaps on the roadside, and covered with pea haulm or other material to dry steadily. Of all the cheaper kinds there are cartloads, yes, and of some of the dearer, cartloads too, but the choice and rare are mostly under cover. Fancy a ton or two of Emperors on a floor of one of the sheds. There are thousands of them of huge size. In one place we find a shedful of Maximus; passing to another building we find the lower floor covered with Horsefieldi; and climbing the ladder are astonished by the flooring of Empress. Then we find floor after floor of the beautiful, and in every garden indispensable, Poeticus ornatus, the famous forcing variety that is sold in tens of thousands, and there were many tens of thousands on view. Benches in long glass ranges were filled with them drying ready for planting and packing; and so I might go on enumerating, for all sorts are there, the rarer in boxes, the more plentiful in heaps—a perfect bewildering maze of brown pear-shaped Daffodils. There appeared to be millions of them—sufficient to stock a kingdom. To the observation, "You are getting too many, Mr. Walker;" the reply came in a quiet, firm Scottish "No, no, not too many, never too many; all will be wanted—all." Yes, most assuredly, he has faith in the future of bulbs.

Faith in the future of fruit, too, or why these splendid glass ranges?—eight new span-roofs, each 180 feet long, 24 feet wide, and about 13 feet high to the ridge, the sides 4 feet, half brickwork and half moveable glass sashes. These, also the top ventilators, open in 60 feet lengths by a simple cogwheel and rod movement. All these houses are intended for Peaches and Nectarines, and for the purpose they are models of lightness with neatness and strength. The sashbars, 18 inches apart, are glazed with 21 oz. glass, no top putty, stout T-iron being used as purlines, supported by pillars for strengthening the roof. In three years' time the sight will be worth seeing, and if I am well and keep on good terms with the owner, he will, I hope, see me there again. Some of the houses are planted, and the growth the trees have made is wonderful. I have seen nothing like them since, some years ago, I saw in Sussex a lofty wall covered by Mr. Edward Luckhurst in four years, and a crowd of grand fruit from base to summit. "I shall let them go," remarked Mr. Walker, "I like to see youthful vigour; if they are not strong then what can we expect?" Mr. Luckhurst "let his trees go," and fed them with liquid manure, and the laterals from the summer's growth ripened and bore fruit abundantly of the first size and quality. So will Mr. Walker's if he does not overcrowd them. The trees were planted so that every other might, and will, be removed for furnishing the other houses, but they have outgrown anticipations, though no harm is done. Numbers of the Alexander Peach and Lord Napier Nectarine have been wisely planted, for they are the best early market sorts, and are fortunately true. All the best of Mr. Rivers' varieties are also included, and all the world does not know yet how good these are. Mr. Walker evidently intends to be in the front with Peaches and Nectarines, and there is no room for doubt that he will much more than hold his own with the French competitors in the English market. He has also hundreds of trees in pots that are bearing well, and will pay well, till the roofs of the houses are covered.

The houses for which the supernumerary Peach trees referred to are being grown are this year occupied with Tomatoes, mostly the new Chiswick variety named Conference, the finest stock, probably, in existence. As a Fellow of the Royal Horticultural Society Mr. Walker was entitled to a packet of seed, and he has made the best of it. Not only did he take care of every plant, but took a cutting from each, and then perhaps others; be that as it may, he has hundreds of plants bearing as no other Tomato of its size can bear. The fruit, like its parent, Horsford's Prelude, is borne in long bunches or racemes, the lowermost hanging down and resting on the ground, and those above overlapping. The plants are confined to one stem, and the earliest topped at 6 or 7 feet, so that the crop can be over and the houses cleared for Chrysanthemums. The

fruits are medium sized and take well in the market, because they are smooth, firm, and rich glossy scarlet in colour, with more than three or four in a pound. As sixpence a pound was the lowest return, a "few hundreds" will probably be made from the packet of seed. "No, no! Mr. Wright, don't say so" (with an emphasis on the so), is what Mr. Walker will say when he sees these lines; but I have said it, and he ought to be very proud of his work. The soil was as hard as a board, as dry as dust on the surface, and the air like that of a desert. That is the way to evade the disease in Tomatoes, as I have many times said, and Mr. Walker believes in the doctrine. I do not pretend to say the disease can be absolutely prevented, but judging from experience, I honestly believe that in nine cases out of ten when Tomato crops have been ruined under glass the calamity has been the consequence of mismanagement in forcing growth unduly by over-rich soil, too much water, and a too close and moist atmosphere.

Just a few lines only on hardy fruit. Mr. Walker has so much faith in the future of Apple growing that if he had 500 acres of land to spare he would plant it with bushes of varieties that he is proving to be profitable. He has fifteen to twenty acres planted, and the free open bush trees are most promising. In my essay I ventured to say Lord Grosvenor was likely to supersede Lord Suffield. With Mr. Walker it has outdistanced it by a very long way, the trees of the former being twice the size of the latter, and the crops five times more valuable. At the time of my visit the large but not very symmetrical fruit were realising 5s. per half bushel, and half the crop had been gathered, the fruit thinned, and certainly half a bushel remained on each tree; but Lord Suffield had only a slight sprinkling of fruit. A long row of Lanc's Prince Albert, a very compact grower, was bearing well. It is an excellent and profitable variety for bush culture, and takes up little room. Much the same may be said of Stirling Castle, which was bearing well, as it usually does, and often when many others are barren. Warner's King and the New Hawthornden were proving their usefulness, as were Yellow Ingestrie and Cox's Orange Pippin. A little known variety, Peter the Great, was bearing handsome fruit, and the free growth and free spurring character of the tree made it a favourite in the collection. Mr. Gladstone was bearing highly coloured saleable fruit, but Lady Sudeley and Worcester Pearmain were bearing sparsely, though they must be ranked amongst the best, as must King of the Pippins (Golden Winter Pearmain) for profit, though not for the highest quality. Duchess of Oldenburg was bearing fairly well, and will bear still better. It is of substantial value, and the New Northern Greening, if I remember rightly, for I took no notes, and Dumelow's Seedling were promising well for future profit. Two Apples which Mr. Walker has not planted, but I think should do so, are Domino and Bramley's Seedling, the former one of the best of the early Codlins, and the latter for storing for late use.

More might be written on the work at Ham Common, but enough is said to show that Mr. James Walker, like Mr. Ladds, is a worthy representative of industrial enterprise in horticulture, and there are others able to meet all comers in our markets. We ought to be proud of such men. They are creators of wealth, and by the employment they give provide for the needs of many who strive to make happy, if humble, homes by the labour of their hands.—J. WRIGHT.

PRIMULA OBCONICA.

ATTENTION is not directed so often as it might appear desirable to this useful, showy, and free flowering plant. Everyone who has any demand for cut flowers is aware of its value, as a good plant in a vigorous condition will positively revel in the early spring and summer months in having its flowers freely cut, provided the plant receives plenty of water and frequent doses of weak stimulating liquid manure. It is not very particular what it is if it is only used clear, so that no sediment is left on the surface of the pot to clog up the pores of the soil. Plants treated in this manner become almost continuous bloomers far into the

winter, when young and vigorous seedlings are ready to take their place with the first flush of spring that comes with the lengthening days.

Seed of *P. obconica* may be sown almost at any time of the year, the main points in its culture being free growth, ordinary warmth and plenty of moisture, with reasonable shade in hot weather and abundance of air. New seed quickly germinates, and the seedlings grow vigorously, but old seed of this *Primula*, like that of others, is slow in germinating, and the plants produced are necessarily somewhat sluggish without the help of some brisk moist heat. Seed sown now would produce plants ready to bloom next spring. *P. obconica* does not wait until it attains a certain size before it blooms, but so soon as the plant becomes strong enough, and is producing fresh new leaves and abundance of fibrous roots, it throws up its flowering stems, though not of course so freely as when it attains to a larger size.

Four, five, and six-inch pots are suitable sizes in which to flower this *Primula*, and the compost used should be rich, free, and open. Loam, leaf soil, decayed cow manure, sand, and charcoal will form a good mixture for potting at all stages of growth. Seedlings at their first transplanting may be placed in pans instead of pots, and if not pricked out too thickly they can be lifted, when large enough, with a sufficient quantity of roots to be at once placed in 4 and 5-inch pots. It all depends then on the wish of the cultivator whether they are further potted or not. Those in 4-inch pots may be moved to 6-inch pots when they are ready, but plants in 5-inch pots make very handy flowering specimens suitable for moving into rooms or windows for decoration. Large plants are not desirable, but those with leaves overhanging the pot sides, and forming a bold and effective base from which the numerous spikes of creamy and pinky white flowers rise, are much to be preferred. This *Primula* is a free surface rooter, and when potting, the plant may be kept moderately low so as to admit of a few rich top-dressings, which will serve to encourage the rapid production of these roots, benefiting and strengthening the plant, and rendering it more floriferous. The removal, too, of seed pods and decayed flowers will materially help the prolongation of its flowering, as well as keeping the plant in a thoroughly creditable condition. Should the plants at any time get very dry, and an ordinary supply of water is not sufficient to moisten the thirsty ball of roots, immerse the pot over its rim in water for half an hour. Apply liquid manure only when the soil is in a moist state, though certainly not when very wet or sticky. The healthiest plants and those with the deepest green leaves are grown in a partially shaded position in a greenhouse. Too much sun takes away the rich green of the leaves, and causes moisture to evaporate from the soil too quickly, thereby robbing the plant of a considerable amount of support.

Seed may be saved from one or two plants specially reserved for the purpose, as it is well not to encourage a great number of flower spikes on plants selected for this purpose. The pollen should be collected from the ripe anthers of flowers on other plants with a camel's hair brush, and conveyed to the stigmas of those which are intended for seed bearing, and when sufficient pods are set and swelling remove all flowers as fast as they appear. By this means good, well-developed seed will be obtained, which when ripe and sown within a reasonable time afterwards will quickly germinate and make fine plants. Division of the roots may also be resorted to to increase the stock, and in the spring and early summer in a moist, warm atmosphere, pieces with a small quantity of roots attached soon grow into good plants, but the flowers are often smaller and sometimes less freely produced than in plants raised from good seed. Gardeners, as a rule, prefer the latter, and, as I think, the best method of keeping up a stock.

Primula obconica is said to be by various persons somewhat of a poisonous nature. The handling and touching of the leaves have caused, it is alleged, a very unpleasant irritability of the skin on the hands and arms, and a kind of rash has appeared, which in some cases has proved very troublesome. I have never experienced anything of the kind, nor do I know anyone who has. If it is proved by further knowledge to be possessed of this unpleasant quality, no doubt a considerable amount of the popularity this plant has now enjoyed for some years will wax and wane. If it be true, however, it may not affect everybody alike, and many may be proof against it altogether.—E. D. S.

LEICESTER CONFERENCE PAPER.

PRUNING IN COMMERCIAL FRUIT CULTURE.

BY MR. G. BUNYARD.

THE OBJECT OF PRUNING.—This operation is designed to assist Nature in the production of superior fruit. Reducing the quantity

of fruiting spurs and excess branches, enables the tree to concentrate its vital energy on a fewer number of buds to their better individual development. Further than this, a good pruner leaves all those buds in the best possible position to catch the sun and air with a view of obtaining not only increased size in the fruit, but to ensure that high colour which such exposure alone can produce. All growers are aware that the fruit from the inside of the tree is not so highly developed or coloured as that from the outside. Thus a careful man will operate with a view to create a natural balance between roots and top, so that each tree can produce a crop yearly, and not, as when left alone, a heavy crop every other year, which makes it require a year's rest to recover itself. I recollect a story told that the owner of a small garden had two large standard Apples that produced a heavy crop every other year, and my grandfather advised him to cut off the blossom from one at flowering time. This brought them so that he had a crop every year. This exhaustion of the tree by an over-crop is emphasised by the fact that most early fruits (whether Apples, Pears, or Plums) are as a rule more regular bearers than later kinds, because the tree has time to recover its lost power between the gathering of the crop and the fall of the leaf, when Nature's repose comes on. Evidently, therefore, it is on these lines that "rational pruning" should be done.

In dealing with this subject from a trade point of view we are naturally at once met with the cost of the operation, and it is here that we are at a disadvantage compared with the cheap labour of the continent; but I would suggest that growers should teach their sons to look after this, which is after all a most interesting operation, and I am sure they would enjoy it as I did looking after our orchard some years ago. The next point is—"How to go to work." I can remind you that in dealing with some fruits you are always on the right track as cultivators, but I want to see the system extended. Take, for example, your Red Currants and Gooseberries after pruning. A novice would at once say you had spoiled them entirely, whereas you know by experience that your berries are twice as large as when the trees are unpruned, and your Currants, too, are larger in the berry and longer in the bunch, while, in some cases, you summer-prune as well to let in the sun to ripen the wood. If this pays in the case of the small soft fruits it will also pay in the case of the harder "top" fruit, and you all know too well that it is the best samples from reputed growers which command the highest price, under-sized fruits and spotted samples really bring down the value of the entire crop. In a warm summer your fruit would be super-excellent, and in a wet or cold one, what you produced would be much finer and clearer than from neglected trees. Again, in the case of Raspberries, you cut off 2 to 4 feet of the canes, certainly to save sticking on the one hand, but you also know that you get much larger berries, and jam makers do not like Raspberries that are all seeds, as they would be if left uncut. In old neglected gardens the berries are not one-fourth the size of properly headed-back plantations. The most forcible example of the value of pruning is afforded by the Cob Nut. As pruned in Kent the tree appears a miserable object after the cutter has done his work, but as the result proves, we get a better crop, and the Nuts are far larger than those on trees not pruned; in fact, if allowed to grow as they like, the Nuts are but a trifle larger than those called Barcelonas in the shops.

Again, why is wall fruit so much finer than that from the open? Because such trees must be pruned to keep them in position, and moreover the spurs are always (in properly cared-for gardens) thinned out, and naturally all face one way to catch the sun, and have the additional benefit of the radiation of heat from the wall to assist in the ripening of the wood.

Having given you, perhaps, too much theory, I will now proceed to indicate how I would recommend the pruning to be done on young trees, say standards or half-standards. In planting, all that is necessary is to cut off any injured roots, and then to shorten back slightly the long anchor-like roots, taking care to cut in closely the tap root, or those roots that have a distinctly downward tendency. The tree should then have its head examined, the planter holding it so that he can, as it were, look it in the face on a line with the trunk. He will then see at a glance if there are more shoots than are required to form a symmetrical head, by preference three, five, or seven shoots placed at equal distances, like the spokes of a wheel. I mean if we can get seven, so much the better, but it is, for the purpose of a foundation, preferable to have even three at a regular distance between each other, than to have four or five, the balance of which is uneven. All surplus shoots can be cut clean away, and the rest not cut or tipped in any way. The following winter (in February by preference, avoiding frosty weather) this head is to be cut back rather severely, say leaving five or six eyes at the base, but cutting so that there is one bud left pointing outwards at the extremity of the cut. From this cutting a mass of shoots will issue, and in July the pruner should go over his trees and cut back

(leaving only one inch of wood) those that are in the middle of the tree, preserving at their full length all those that form a head like an inverted umbrella. The following February these are again shortened; but this time allow about 6 inches of the new wood, and continue the operation for a few years, when the trees will begin to bear on the old wood. Keep the centres of the trees thinned out, and do not allow too many shoots to encumber the tree, but cut so that all hang free and do not cross each other. Possibly, in a few more years, some of these may be cut away with advantage, and there will be stronger ones taking the lead, and provided they are in proper places, may be allowed to go ahead. I consider this severe pruning necessary at first, because some fruits (notably, Manx Codlin, Stone's, and Lord Suffield Apples), if left uncut, form a mass of fruit buds, and come into bearing, and never afterwards get beyond a mop-sized head. Some Pears and Plums have the same tendency.

In planting Plums (from the nature of their roots), if the planting is completed before Christmas, they may be pruned the first year of planting; but if done after that time it is better to allow them to wait one year. Their after attention is the same as that advised for Pears and Apples, but as they grow more freely they need not be cut back so hard, as they form a head rapidly.

In planting Cherries I strongly advise planters to let them stand the first year without cutting at all (except the roots as advised for Apples). In the following season cut them back as required, after which the less "knifing" done on them the better, merely removing the crossing boughs. As Pears have fewer roots than Apples they must not be so severely cut.

The management of bush or pyramidal trees will be the same as advised for standards, having regard to the form of tree desired, but as they are more protected from the wind, and the crop can be thinned, they may be left with longer shoots than standards. Apples upon the Paradise stock may be cut back the first season if planted early.

In soft fruits, the prevailing custom of cutting them hard the first year cannot be improved upon; but in case of late planting (say February or March) the resulting shoots are so thin and sappy that it may be best to let them stand a year to establish themselves before pruning. It is most desirable that they should be planted before December, as in that case the rootlets push and get a firm hold of the soil before winter sets in. In planting Raspberries for market, they may be shortened before planting to about 2 feet.

I now come to a more important point in pruning—namely, that of old or neglected trees, which are far too prevalent, and where faggots must be taken out to make any impression on the mass of useless wood they contain. In dealing with such examples we need to be very careful, for it is well known that large boughs sawn off Apples, Pears, Plums, and Cherries will sometimes result in decay, and in that case the tree suffers loss by heavy-laden boughs giving way at a weak spot. I am of opinion that it would be well not to cut these so close to the main stems and branches as is usually done, and that after the saw has been used the surface should be planed over or smoothed with a knife, and the edges neatly rounded with a sharp knife, so that the new bark can creep over and cover the wound.

All old orchards have trees with holes in them—the favourite nesting-places of the starling and tom-tit. The wood decays, and the woodpecker first starts the aperture by searching for its food, and other birds take the opportunity to nest where they can readily make room in the soft spongy wood. All shoots over half an inch across should be rounded in the way indicated, and I strongly recommend that this pruning should be done as soon as the fruit is gathered, as the bark makes some progress to cover the wound, the same season, and the air being dry, the wood hardens (so to speak, heals) more than in the winter; and, moreover, the shoots that are dead and leafless can at once be detected much more readily than when the leaf is off. Now that the strain of farm work is reduced by the grubbing of Hop land, more labour is at command for this work, and I must repeat that all this severe pruning should be done in the summer or autumn. Especially should all broken and split boughs be removed from Plums where injured by an over crop. I have heard of trees being severely injured by being pruned in a heavy frost, when the men could not work on the land, but I cannot say that it is always so. In pruning these "old staggers" it is not advisable to tip the branches, as the most lively wood, which draws the sap up freely, is on the points, and they nourish the tree.

The next point which I think worth a trial on a large scale is the thinning of the spurs. I have before me a fruiting branch of the old Yorkshire Apple, the Cockpit (a free bearer but too small for profit). When the trees bear, I have half the fruit taken off, but although that makes the fruit finer, I am now thinning the

spurs so that they may be larger still, and I am persuaded that if half the spurs were taken from our old orchard trees, which is easy work with a tool like the one I am using, we should have much finer fruit, and the spurs if cut about an inch from the stem would, in some cases, throw out other spurs, which in time would enable us to prune out those left in the former cutting, and thus we should have perpetual youth on the head of an ancient body. Pears are most profuse in the way they spur, and some kinds bear so freely that they are not inaptly said to crop like ropes of Onions. In the case of Plums it is the same. The Diamond would bear more freely if half its spurs were taken out, and the Victoria under this treatment would not be so liable to break as it does from carrying such heavy crops. Jefferson again is a mass of spurs; in fact, even in winter, an expert can tell the names of leafless trees by the form of the spurs, and the style they set on the branches.

In removing what I may term surplus spurs, those found on the under sides of the branches are of little value, and if I say, negatively, that the pruner should retain all those in the best positions, and remove the rest, you will get an idea how to work. The Crittenden, or Cluster Damson, is one which makes a mass of thorny spurs, and I think these require thinning, as if left too thickly on the boughs the fruit is very small, and you will have noticed that the trees from suckers are much more inclined to thorn than those budded, which take more of the Plum nature. The King of the Pippins and Manx Codlin Apples, for example, are very fruitful trees, and I know that those who prune them on the spur system and shorten all the young growth defy the inevitable canker which affects these sorts. These close pruned trees grow marvellous fruit, which sells at a price that pays for extra labour expended. Such kinds as Court Pendu Plat and Keswick Codlin again make too many spurs.

I can scarcely leave the subject of pruning without reference to the Kentish Cob Nut, a subject which requires more cutting and pruning than any other fruit.

When received from the growers these trees have a small head upon a stem of 12 to 15 inches, and this stem is intended that the ground beneath the bush may be the more readily kept free from weeds and be dug. They are planted as received, and allowed to grow for one year, when they should be cut hard in, to make them throw out vigorous shoots from the base of the head to form the start of the future tree. This is done by annually cutting, so that the next terminal shoot is made from an under bud, which in course of time makes a tree formed like a washing basin. I note the best shaped trees have started with six to be doubled to twelve main branches. From these a set of spurs or short shoots are given off, on which the nuts are produced, and the trees should be so managed that at the end of 100 years old they should be 15 or 20 feet across the top, but not higher than 5½ feet from the ground. From the bent portion of the main boughs a number of strong yearling shoots will be given off, which in Kent are called wands. These are taken out in summer, or partially so, for packing the autumn fruit, and in winter the rest are broken out, and either sold for flower sticks or basket making, or reserved to pack soft fruit the next season. The male or catkin blossoms are produced most freely at the upper part of the trees, and should be allowed to remain long enough to fertilise the pistillate or female flowers, which are produced on the smaller boughs. When the weather is very still and warm it would pay to tap the boughs with a stick, to make this pollen fly. When winter pruning the spurs are thinned, and if need be stopped. Old wood is removed, and the stronger growths shortened and thinned, leaving the tree regularly balanced on all sides, and with free play for the air and sun among the branches, remembering that the foliage is large on pruned trees. If time permits in July or August, it is a great help to the strength of the tree to break the stronger shoots off the upper boughs with the finger and thumb (a sharp twist being all that is required), this plumps up the buds below the fracture and assists the ripening of the wood, and it is found better than cutting, as the broken surface allows some sap to exude, and this prevents the formation of a secondary growth, which would weaken the bush and be of no value to produce Nuts. In pruning (in winter), these cut ends are smoothly severed with a sharp knife. A careful pruner will proceed so that there is always abundance of fresh young wood in his examples, and when a twig shows signs of age, he cuts so that a fresh young one shall succeed it in the next year's cutting, so that worn out twigs are never seen in ancient trees. Suckers from the roots should be hoed off in growth or severed with a sharp spade, and if well rooted some may be reserved to make future plants.

In Continental works on fruit culture much stress is laid on the tools used. A few which we find useful as labour-savers are: 1, Coppin's tree pruner, avoiding the use of ladders in young trees; made from 6 to 10 feet long. 2, American lightning saw, very

easy and rapid in its work; capital for green wood. 3, Belgian secateurs for pruning. 4, Aubert's Parisian secateurs. 5, Clasp and sheath knives.

AUTUMN FUCHSIAS.

BUSHY specimens in 5 or 6-inch pots are very attractive in the conservatory during the months of October and November. Free flowering and naturally bushy growers are those which give the greatest satisfaction, and if plants were struck late in spring, and are now growing in 3 and 4 inch pots receive frequent pinching, they will, with another shift into a size larger pot, and continuing the pinching when the shoots get long enough, grow into desirable plants, handy in size, with fine healthy foliage, and a promise of abundance of bloom. It is only the single varieties that can be recommended for these purposes; the doubles are not, as a rule, free enough in flowering at that time of the year. A cool frame on a bed of ashes is the place to grow them for the next five or six weeks, where they can be readily shaded from strong sun, and the lights removed in showery or dull weather and dewy autumn nights. Shade and moisture will keep them soft and growing, but a dry atmosphere and too much sun will bring them into flower too soon. A free, open, and rich compost composed of turfy loam, leaf soil, decayed manure and sand, with broken charcoal mixed therewith will grow them well. They may be frequently syringed in dry weather, and should at such times receive attention at least twice a day, to ascertain whether water is needed or not. They will scarcely need any kind of liquid or artificial manure until the pots are full of roots and flowers are showing, which it is desirable should be encouraged to develop, and only then weak supplies will be needed, as the demands of the plants are not so heavy and frequent as in the longer days of summer.

Any very free flowering varieties will be suitable for autumn decoration if properly prepared. Older plants that have done blooming may be encouraged to flower again by a little shortening back of the shoots, a warm close atmosphere and frequent syringing to induce fresh young growths, which, partially ripened, are sure to produce flowers, which are always welcome late in the season.—S. W.

NOTES ON EARLY ENGLISH HORTICULTURE.

(Continued from page 479, last vol.)

JUST now the minds of Chelsea folks are exercised lest the long famous Apothecaries' or Physic Garden on the banks of the Thames, so long sacred to horticultural and botanical purposes, should have its few acres thrown into the devouring maw of the modern builder, which has swallowed hundreds of the acres about London formerly occupied as nursery or garden grounds. Let us hope many persons in other London districts will be heartily interested in the effort to keep intact this historic space, and also to utilise it, if that be possible. Some way may be found, I think, to give this small area a botanical or educational value, and thus keep in remembrance the design with which Sir Hans Sloane handed over the land to the keeping of the Apothecaries' Company. In pursuing the history of our horticulture we have reached a period when this Chelsea garden had attained a position of importance, owing to the eminence of Miller, head of the establishment from about 1722 to 1769. The renowned Linnaeus spoke in the highest terms of Miller, with whom he often corresponded, and by some foreign botanists he was styled the "Prince of Gardeners" in that century, but of course at home he was not greatly honoured, at least during his life. A large number of exotic plants had been added to this garden in the reign of Anne, when Doody was gardener, and Petiver demonstrator. The latter was an intimate of Ray, and a great collector of natural history objects generally. Many of his specimens were bought by Sir Hans Sloane, and formed part of the nucleus of the British Museum. To encourage the apothecaries in their researches after new and rare plants the Baronet presented the Company with this garden on condition of their handing in yearly fifty fresh specimens reared there to the Royal Society till the number of 3000 had been reached. Small as is the space, it contained one of the most important collections of exotic trees formed early in the eighteenth century, and even now some of these live there in their descendants. Its splendid Oriental Plane, considered to be the finest British specimen, was killed, as was supposed, by the works of the Embankment, and its famous Magnolia died some years ago. This Magnolia was an offset, it was said, of the celebrated tree planted at Exeter, which supplied plants to many gardens near and distant. Amongst its notable trees were the large examples of the Nettle Tree, the Paper Mulberry, the Salisburia, the Pistacia Terebinthus, and several species of

Pandanus. On a visit to the Gardens I was fortunate enough to see in full flower a very large and venerable example of the *Styrax officinale*.

Phillip Miller's father was a market gardener at Deptford, and at the time he accepted the office of gardener to the establishment at Chelsea Miller had a small nursery near Newington Butts, Surrey. According to Field, the historian of this Chelsea garden, the career of Miller showed what an ordinary working gardener might do in the way of raising himself to eminence by study and perseverance, for he was apparently a self-taught man. His "Gardeners' Dictionary" proves how extensive was his theoretical and practical knowledge, and though the work was costly its sale was considerable for that period. We can quite believe on examining this book in Field's statement that horticulture is greatly indebted to Miller for his trouble in procuring and his skill in cultivating species or varieties unknown to these islands. He appears to have been the first to recommend the practice of growing the bulbs of Hyacinths, Tulips, and allied species in water, though it is probable the introducer of the method was one Martin Triewald, a Swedish gentleman, about 1728. It is likely that Miller's influence led to the formation of a society of London gardeners and nurserymen, at which discussions took place on horticultural topics. Amongst its senior members we notice the names of Fairchild, Hoxton; of Furber, original proprietor of the Kensington Nursery; Gray of Fulham, Driver of Lambeth, and Hunt of Putney. The Messrs. Hunt had a rather extensive arboretum on the bank of the Thames, sheltered by the Surrey hills. Its trees and plants were sold in 1834, and the ground cleared for building. James Lee, who afterwards started the Hammersmith Nursery, was one of the younger men in this Society. He was then working under Miller at the Apothecaries' Garden. It may be that the speedy dissolution of the Society arose from the ill success of a volume they prepared conjointly, one intended to be the first of a series, which would be given a complete and illustrated catalogue of all hardy trees, shrubs, and plants. This first part was published at a guinea and a half, with figures of fifty species drawn and coloured by Van Huysum. This, if it could have been completed, would have helped on English horticulture considerably, but it failed to obtain purchasers. The fame of Miller led to his being often consulted by the owners of extensive gardens as to arrangement of ground or methods of cultivation. Amongst his employers were the Dukes of Bedford and Richmond. Miller held his office at the Chelsea garden till 1769, and died soon after his resignation. By the joint efforts of the Botanical and Horticultural Societies of London a cenotaph to his honour was erected in the old churchyard of Chelsea in 1815, but from some strange mistake it is placed on the spot where Horsfall the printer was buried.

The society of gardeners to which Miller was secretary consisted chiefly of West London men, but it had a few members at Hoxton, Kingsland, and Mile End. In the reign of George I. very different systems were followed in the gardens or fields at the east and west of London. The market gardeners at the east raised large quantities of vegetables for the city; those at the west, with a more limited space at command, grew more choice kinds, and managed to have a rapid succession of crops. About this period the White Beet was grown extensively, the midribs and footstalks of the leaves being boiled and eaten as Asparagus. We should also have seen in the gardens what was called Lamb's Quarters (*Chenopodium bonus Henricus*); the leaves of this plant some thought equal, or superior, to Spinach. The Chive was a variety of the Onion much in demand, because the young plants were cut up for salads, and they were also put round flower beds for an edging. A plant now neglected, the Squash Melon (*Cucurbita melopepo*) had some popularity, being grown on the sides of rivulets or ditches. Our ancestors gathered the fruit unripe, boiled it, and served it on toast. Few cottage gardens were without some plants of the Pumpkin. People used to compete in trying how far the shoots could be made to run over a grassy bank. One writer on gardening thinks that the English would never have been so partial to all varieties of Cabbage as they showed themselves in the eighteenth century except for the influence of northern gardeners, and the Scotch, he adds, must have acquired their liking by contact with the German fishermen. It was usual then to grow Spinach amongst Cabbages, and a favourite plan of the gardeners was to plant Cucumbers along the rows of this vegetable in May. Quantities of Lettuces were sown in frames about June, and afterwards transplanted under glass. One singular feature of market and kitchen gardens of that time was the numerous pits, receptacles of dung and litter, to which water was freely added to excite fermentation, as it was not usual to spread at once to the land what manure was obtained from the stables and cowsheds. Gardeners then preferred to have the kitchen garden somewhat on the incline, open

toward the south, and sheltered by shrubs or trees on the other sides.—J. R. S. C.

NOTES ON A TRIP TO ENGLAND.

I AM recently returned from what every gardener should annually have the privilege of enjoying—namely, a fortnight's holiday. It has been suggested that a few notes of what was seen on the way might interest readers of the Journal.

Having experienced one of the wettest seasons on record in this country, we were fortunate in securing a fine day for commencing our journey on July 15th. Leaving one of the principal junctions in the south of Ireland, we travelled by the G. S. and W. Railway to North Wall, departing from thence at 7 P.M., enjoying a pleasant trip of four and a half hours' duration to Holyhead. Being dark little of the scenery could be noted for the first three hours. On moonlight nights, however, the views from Holyhead to Chester are magnificent. Not until we are nearing the latter station can we see much of the surrounding country, and then the outlook is gloomy enough; a dense fog with drizzling rain, and we fear we have brought Irish weather with us. However, we reached Dorking without getting much rain, but the next day we had such a downpour as I have never before witnessed, but afterwards we had "Queen's weather" in perfection. Being in this locality we call at

THE ROOKERY,

The beautiful residence of G. A. Fuller, Esq. Great improvements have been carried out here during the last few years. New herbaceous borders have been formed, and planted with a capital selection of plants. The back of the borders contain a great variety of new and rare flowering shrubs. A good collection of fruit trees has also been formed. Apples, Pears, and Peaches are a slight crop; bush fruits of all kinds are very abundant, and the quality excellent. In the kitchen garden we noticed the best Onions that were seen during our travels. A large bed of Carrots had been recently attacked by the maggot. To check their depredations a dressing of soot 2 inches thick was spread over them, and well worked in with the hoe. The Carrots were at the time of our visit doing remarkably well. Peas were cropping very well, but like our own had grown out of all recognition. In the houses a miscellaneous collection of plants were being grown, such as is generally to be found in medium-sized gardens. Grapes were a heavy crop. Peaches, however, were a light crop. In a small lean-to Tomatoes were carrying a splendid crop of fruit. Here we noticed some admirably well flowered Tuberoses and Lilliums, principally auratum. Melons and Cucumbers are well grown in frames. Outside we inspected a very fine and well grown collection of Chrysanthemums, which look as if they will yield a good return later on. In front of the mansion summer bedding is carried out, and with the exception of Coleus all the plants were looking well. Great credit is due to the able head gardener, Mr. Grant, for the admirable way in which everything relating to this beautiful garden is kept. The next move is to

HIGHLANDS, BOLNEY, SUSSEX.

This is the residence of B. B. Hodgson, Esq., and I trust if I enlarge somewhat upon this model garden, that you and your readers will forgive me when I state that it was in this establishment I first commenced my gardening career a good many years ago, under the same talented head gardener, Mr. J. Harding, who still so ably presides over it. I find my old chief busy training some young Gooseberry bushes, the majority of which proved to be Whinham's Industry. This, Mr. Harding considers the best of all Gooseberries; it is an immense cropper, and the large red fruit are very attractive. Apples and Pears here, too, are a very light crop, all other fruit plentiful. A new orchard was made last winter and planted with the most approved varieties. The trees are doing well, and should be able to carry a light crop next year. Abundance of Apple and Pear trees were planted here by Mr. Harding's predecessor, but out of about 1000 trees I do not think there are twenty that crop well. The garden walls were all planted with diagonal cordon trees. True, they cover the wall, and that was about all that could be said for them during my sojourn there, and as far as my observations went they are no better this year. The soil is a strong clay, most difficult to work. Strawberries do splendidly in it; at the time of our visit, July 19th, there was a grand crop of Alice Maud. Noble had been very good I was informed, both on forced plants and outside. It was considered the most attractive but the worst flavoured Strawberry in existence.

No garden appears to be complete nowadays without it has a Tomato house. Since our last visit we find one has been erected here. The plants are strong and healthy, and are, moreover, carrying a marvellous crop of fruit. Adjoining this house are the Melon and Cucumber pits. Several novelties were on trial, and, judging from present appearances, will cause a sensation later on. We next enter the late vinery; this is planted entirely with Black Hamburgs. The Vines are not doing well, and the bunches are consequently small. This house has a very bad aspect, being shaded by large trees until the day is far advanced. Situated in another part of the kitchen garden is a range of three houses; the first is the early vinery, it contains one Foster's Seedling, the remainder are Black Hamburg. This Grape is the favourite here. A fine collection of Ferns is grown under the Vines, and right well they thrive under the shade thus afforded them. The centre house is an intermediate house, and contains a fine collection of various decorative plants. Some most brilliant Coleus arrest our attention. It may interest readers of the Journal to know that Mr. Harding raised The Queen Coleus here some years ago. He has now some very promising

seedlings. The remaining house is devoted to Peaches, and fine crops of fruit were ripening. Near at hand is a span-roof stove in two divisions, containing well grown flowering and foliage plants. Outside vegetables of all kinds were looking well. We were greatly taken with a plot of Sutton's Favourite Lettuce. It is the finest Lettuce I have ever seen; they are very large, solid, and crisp, and show no inclination whatever to bolt; in fact, they decay before they will bolt. Everyone should grow this Lettuce.

Passing the herbaceous borders we find the large well kept lawn judiciously planted with shrubs, trees, large clumps of Pampas Grass, Tritomas, beds of Roses, relieved here and there by a bed of summer bedding plants, while the large clumps of shrubs are margined with ribbon borders. Since our last visit a splendid conservatory has been built adjoining to and accessible from the mansion. The majority of the plants are either plunged or planted out in the borders. Everything in this structure is grown as naturally as possible; at the north end is a beautiful fernery all planted upon the natural system. In addition to the "sundry and manifold" duties of a gardener, Mr. Harding, a few years ago, took charge of the farm; the combined duties render his life a busy one. Supported by a generous employer he has converted what was formerly a commonplace garden into a veritable paradise. May he live long to enjoy the confidence he has won, and the pleasures of the gardens over which he has so creditably presided for so many years.

A naturalised Irishman may be pardoned for wishing to see some of the sights of London and its suburbs. A trip to Kew was therefore taken one day, and our impression, after an absence of eleven years, was that the plants in the houses are wonderfully improved, they have a far healthier appearance than we ever saw them in before. We were very pleased with everything we saw there except the summer bedding between the lake and the large Palm house. The wet season may have been against it, at any rate we came to the conclusion it was not such an "ilegant" affair as we were led to believe.

Another day was devoted to a trip to Forest Hill to see the famous Begonias at Messrs. Laing's. We were fortunate in securing Mr. Laing, junior, for our guide, and we are shown house after house of Begonias from the small seedlings to the famous exhibition plants familiar to all show-goers. Outside we find many thousands of seedlings planted out; some of these would give one a strong inclination to break the tenth commandment. Everything connected with this establishment is in good keeping, and does great credit to the heads of the firm.

The last day was spent in a hurried run to the Victoria and Paradise Nurseries. There we found much to admire in the Orchid department. There were thousands of plants, and not a sickly one among them. Everything is well grown, but the Orchids and magnificent Azaleas and Camellias are particularly noticeable. I made no notes of anything while away; writing from memory only, the sketch is but an incomplete one of the places visited. In conclusion, permit me to thank my guides individually and collectively for the courtesy and hospitality which each and all accorded to—HANDY ANDY.

ROYAL HORTICULTURAL SOCIETY.

AUGUST 12TH.

SCIENTIFIC COMMITTEE.—Present: Dr. M. T. Masters, in the chair; Mr. Veitch, Mr. McLachlan, Mr. Morris, Mr. Wilson, Rev. W. Wilks, and Rev. G. Henslow, Hon. Sec.

Carnations and Tipula.—With reference to the diseased Carnations, after a further and careful investigation by Mr. Blandford, he thinks that the Tipulæ were not the cause of the mischief, but "interlopers." He considers the state of the plants as more probably indicating the work of an anthomyid fly, but cannot speak positively on the point as yet.

Bird's Nest of Rhizomorpha.—The specimen shown at the last meeting was brought by Mr. Blandford's brother from Argentina, and exhibited by him; not by Prof. Ward, as accidentally mis-stated.

Phylloxera.—A report was received from Mr. Barron that the instructions of the Scientific Committee had been carried out at Chiswick with the view of the destruction of the Vines infected. Mr. McLachlan observed that when the same treatment had been followed a few years ago, it proved perfectly effectual, no trace of the disease having appeared since in the same locality.

Distribution of Plants from Chiswick.—To guard against the possible extension of Phylloxera, it has been determined by the Council that no plants of any kind, nor Vine cuttings, shall be issued from Chiswick for the present.

Tomatoes Diseased.—Specimens of the fruit attacked by Cladosporium and Phytophora were received from Chiswick. They will be forwarded to Dr. Marshall Ward for examination and report.

Vine Shoots atrophied.—Mr. Morris called attention to the fact that this, at present, obscure complaint is by no means uncommon. It occurs in other gardens in the neighbourhood of Chiswick, and is regarded by cultivators as very injurious indeed. If it affects the primary shoot in the early stage of growth, it apparently renders the Vine utterly barren. It is suspected as being due to some fungus. It is in the hands of Professor Ward for examination.

Pinus Strobus, &c., Attacked by Chermes.—Mr. Morris mentioned that trees in the arboretum at Kew are being injured by some species of Chermes. It has the habit of attacking the upper part of the trees first, and then, apparently by falling on to the lower branches, it spreads downwards. The only remedy appears to be petroleum emulsion well syringed over the trees.

The Potato Disease.—The following interesting communication was received from Mr. J. Wright, who records the fact that the immense advantage of high moulding was known so long as twenty-five or more years ago in Lincolnshire. He says: "I first saw it in full and systematic operation in most of the cottage gardens at Appleby, in Lincolnshire. The seed tubers were placed a yard asunder on the surface, and mounded over. When growth appeared they were mounded again, and when the haulm had a tendency to fall down, three or four of the best stems (the weakest being pulled out) were gently bent down, the early leaves not being smothered, and spread equidistantly, and then "crowned" with soil. This "crowning" was repeated at intervals till no more soil could be dug from between the mounds. The object of the cultivator was to get a peck of tubers (21 lbs. from a mound). I have had 18 lbs., 19 lbs., and 20 lbs., but never 21 lbs. I have known practically the whole of the mound crops sound when those on the level were worthless, for the results of this system were far in advance of crops on the level in "bad disease" years. With the introduction of strong upright-growing sorts the mound system fell into disuse. I have known several plants in the middle of a Potato bed tied upright to sticks and kept so, so that the early-formed leaves remain exposed to the light and air. These not only yielded more than twice the bulk of tubers of the surrounding procumbent plants, but the former were sound when dug while the latter were rotten. This was in a wet and "great disease" year. I remember once seeing water standing between the rows in a Potato field because it could not pass through the hard "sole" or "pan" made with the plough. I took a fork and broke up the pan over a rod of ground, and the water rushed away. In no other part of the field were the Potatoes worth digging. With regard to varieties, short-topped Potatoes were the favourites in former days for late or winter use and pig feeding, but the weak-stemmed and foliaged sorts were annihilated by the murrain, only the more robust and coarser surviving, and only one that could in any measure be relied on had stout woody stems that remained upright with large thick leaves. It was known as the "Old London Red." The quality, however, of the tubers was inferior, and Sutton's Red-skinned Flour-ball was an improvement of great value in those days. Ever since varieties of the same upright growth and strong leaf-power have proved to be the best disease-resisters, and, fortunately, the tubers of several of these are now of good quality. Tender-stemmed late-growing varieties which fall and cover the ground not only prevent evaporation from the soil but lose all their best leaves prematurely through want of light and air, the weaker leaves towards the tops of the stems alone remaining (as long as they can) to exhale moisture and carry on the other functions of plant life. For this reason such plants fail to withstand the fungus, which readily takes possession."

Mr. Henslow drew attention to the recommendation of his father (the late Prof. J. S. Henslow) to save the starch from Potatoes which might be so far decayed as to be useless as an article of food, for 75 per cent. of starch can often be recovered from such tubers. Several Suffolk farmers followed his suggestion in 1845, when whole fields were utterly destroyed by the disease. Mr. Henslow would be glad to describe the method to anyone who will communicate with him at Drayton House, Ealing.

Stylidium graminifolium.—Mr. Morris called attention to a plant exhibited, a native of Australia. It is well known for the peculiarity of its irritable style. This is at first bent to one side, but when touched at the base suddenly flings itself over to the opposite side of the flower. A similar movement is observable in *Maranta*, a plant allied to the Ginger.

Cypripedium superbians.—A plant was exhibited by Malcolm S. Cooke, Esq., of Kingston Hill, of this Orchid, remarkable for having three flowers, two of which bore double labella, while the third was twin-petalled. Dr. Masters observed that the number of malformed blossoms of Orchids which he had received was on the increase; many occurring on *C. Sedeni*, they being always late flowers which are malformed, according to Mr. Veitch's experience. *C. Lawrenceanum* is another which affords many monstrous conditions. Dr. Masters raised the question whether it might not be in many cases an indirect result of hybridisation. *C. superbians* originated from a single plant accidentally included in a batch of Orchids, and though usually regarded as a distinct species, may possibly be (as Mr. Veitch suggested) a natural hybrid.

Agapanthus umbellatus Malformed.—Mr. Wilson showed a flowering scape with the superficial tissue "ripped up," as it were, at various places along the edge of the somewhat flattened stem. It appeared to be due to an irregularity in the rates of growth of the tissues, so that the superficial layers had become ruptured at places, and curled outwards.

Jeffersonia diphylla, Fruit of.—Mr. Wilson exhibited a specimen of the fruit of this Berberidaceous plant. It consists of a single carpel or "follicle," but instead of dehiscing down the ventral suture, as in *Aconite*, it bursts by a semi-circumscissile dehiscence, the lid remaining attached at one, the ventral side. In most cases of "pyxis" the lid is quite separate, as in *Henbane*, *Plantains*, and *Anagallis*. As the fruit is at right angles to the stalk, it has an extraordinary resemblance to a miniature pipe.

Daffodil Bulbs with Merodon.—Mr. Wilks exhibited bulbs of the double maximus, with the grubs of *M. equestre* within them. They destroy the interior of the bulb, but their presence brings about a proliferation, as an immense quantity of bulbils are produced, which would not otherwise be the case. Hence they may be regarded as useful for the purpose of multiplication, though of course accompanied by the destruction of the flower which the original bulb would have borne. It appears that the grub descends into the ground in autumn to form

the chrysalis, the imago escaping in the following summer. Hence the best period for examination of bulbs, in order to destroy the grub, would be July.

Gloxinia Leaves, Diseased.—Leaves covered on the under side with light brown spots and patches were received from Buckskin Hall, Herts. It was first suggested that overwatering, especially with cold water, might have been the cause, as this is apt to produce similar injuries; but a microscopic examination revealed thrips and acari, which it was thought was no doubt the real cause of the mischief; consequently it should be treated as usual with tobacco powder.

Haastia pulvinus, Hk. f.—A fine specimen of this remarkable composite was exhibited by Mr. Richards, obtained by him from Mount Perceval, Amwin, at an elevation of 5000 feet. It forms dense masses of agglomerated woolly capitula with yellow florets.

The next meeting of the Scientific Committee will be held in the Council room on October 14th.

GOODIA LATIFOLIA.

THERE are many plants suitable for cultivation in greenhouses that are now seldom seen in collections, though they would help



FIG. 20.—GOODIA LATIFOLIA.

materially in increasing the diversity of effect in houses too frequently distinguished by monotony. A neglected plant almost confined to botanic gardens is *Goodia latifolia* (fig. 20), an Australian evergreen shrub, which has been in this country for a great number of years, but has gained a small share of popularity. These old plants are unknown to the present-day gardeners, and when a specimen is exhibited or some old collection is visited when the plants are flowering they attract as much attention as a novelty. This *Goodia* is not a sensational plant by any means, but it is well worth growing. The golden flowers, with a dash of red at the base of the "standard," are numerously borne, though comparatively small individually, and a well developed specimen is a useful occupant of a conservatory or

greenhouse. Both *G. latifolia* and its relative *G. pubescens* require a compost of loam and peat with good drainage, and they can be increased either by seeds or cuttings, the latter receiving similar treatment to Heaths or other hardwooded plants.



EVENTS OF THE WEEK.—To-day (Thursday) the Exhibitions at Shrewsbury and Newcastle-on-Tyne are continued, the latter also lasting over to-morrow. On Friday the Devon and Exeter Exhibition is held, and on Saturday, Leith. On Tuesday (August 26th) the Royal Horticultural Society's Committee meetings will be held at the Drill Hall, Westminster, and the Calne Horticultural Show and Floral Fête will be held on the same day.

— THE WEATHER IN THE SOUTH.—The bright days of last week led many to hope that summer had come at last and to remain over the harvest, but on Monday the temperature fell and the sky became overcast, and on Tuesday rain continued, though not very heavily, nearly the whole of the day. Yesterday (Wednesday) was fine.

— ALEXANDER PEACH.—The late Mr. Wildsmith, who knew what were the best sorts to grow of most kinds of fruit trees, had a very high opinion of this Peach, claiming for it the position of being the best early variety in existence. From his suggestion we planted several trees of it last autumn in south and westerly aspects. They have made capital growth, and we hope for a limited crop of fruit next year.—E. M., *Hants.*

— FOWLS AND FRUIT.—Perhaps the following may be of some interest, now that we have to deplore an almost total absence of fruit throughout the country:—A few days ago I visited Mr. Grant, market gardener, at Bracebridge, near Lincoln, who has an orchard several acres in extent. Very little fruit was to be seen, except in one corner about 50 yards square. The trees there were literally breaking down by the weight of fruit, this limited space promising a better supply than all the other trees in the orchard put together. And why? Because about 100 fowls had been kept—wired in—in that space for the last two or three years, and it appears to me that the poultry in question must have destroyed, or at any rate checked, that destructive pest—the caterpillar—in some stages of its development.—ALBERT WIFF.

— ALEXANDER AND ALEXANDRA NOBLESSE PEACHES.—Three years ago I wished to get a tree of some size of the Alexander to replace one in an early house, and was asked to take one of Alexandra Noblesse. I was supplied with a maiden tree of the variety wanted, which was planted against a west wall, where it is now, and has ripened a fair crop of highly coloured fruit, commencing about the 25th of July. Many of the fruits had split stones. Is this a failing of the variety, or is it due to the wet sunless season, or for lack of something in the soil? It is now about to be moved indoors.—R. G., *Mid-Sussex.*

— CLITORIA TERNATEA.—We have grown this plant during the last seven years, and its brilliant blue flowers are much admired. There are three reasons which prevent its becoming more generally cultivated. First, its great beauty is so little known; secondly, to grow it successfully abundance of heat and moisture are requisite at all times; and thirdly, it is liable to be infested with red spider. Seed should be sown in the early part of March in sandy peat soil, plunging the pots in a brisk heat. If three or four seeds are put into 4-inch pots they can be shifted into larger pots without materially disturbing the roots. A compost of turfy peat and loam, with sand and leaf soil added, will grow this plant well, provided it receives abundance of moisture both at the roots and on the foliage, and occasional applications of liquid manure when the pots are full of roots. Ten-inch pots will suffice for rooting space. The growths need to be near the glass in the stove, where ample light can be secured and trained to wires stretched from rafter to rafter. The best show of plants and bloom which I have yet seen was in the Banana house at Sion, where Mr. Wythes manages to grow it well.—S.

— MR. ROBERT OWEN'S NURSERY AT MAIDENHEAD is worth a visit just now, the Begonias and Pelargoniums under glass, with the Dahlias out of doors, providing strong features of interest. During the time that he has been established in business Mr. Owen has got together a well-furnished and compact establishment, and nothing could excel the cultural excellence of his plants, which are without exception admirably grown, and no plants sent out in similarly healthy and clean condition could fail to give satisfaction.

— TUBEROUS BEGONIAS form one of Mr. Owen's strongest features. He has a large and good collection, comprising some hundreds of seedlings, many of considerable merit, and ranging in colour from white to blush, pink, rose, salmon, orange, vermilion, scarlet, and crimson. The majority of the singles, in fact, were unnamed seedlings, and among them many were noted of improved form, colour, size, and habit of growth. Hybridisation is being effected with a view to getting a strain throwing their flowers up boldly on stiff, erect stems. The compact Cyclamen-like habit of growth of Mr. Owen's Begonias is very noteworthy. Among named varieties may be noted Duke of Westminster, salmon-red; Multiflora pendula, rosy carmine, useful for baskets; and the following doubles:—Empress, salmon-pink; General Gordon, light scarlet; Serapis, bright rose, light centre; Leviathan, salmon-rose; Rosette (Owen's) blush, suffused with rose; Eurydice, white, remarkably free; Davis, fl.-pl. superba, and D. fl.-pl. superba alba, both good in habit, and very free. A large number of Begonias are also planted out in beds.

— IVY-LEAVED PELARGONIUMS.—Something has been done to popularise these remarkably useful greenhouse and conservatory plants by the excellent collection of them that has been grown at Chiswick this year. Mr. Owen grows them largely at Maidenhead, and he has devoted much attention to improving the section, with remarkably successful results. Many good judges consider his Souvenir de Charles Turner to be the best of the section; it is certainly a beautiful variety, carmine in colour, the flowers large and very freely produced. A good trio of his are Edith Owen, carmine, dwarf and floriferous; Robert Owen, a rosy red, the individual flowers very large; and Beauty of Castle Hill, deep rosy red. It is to be hoped that the culture of this very valuable section of Pelargoniums will largely increase.

— LILIUM GIGANTEUM.—I consider this the most stately and beautiful of all the Lilies, yet it is seldom seen in good condition; and as I have been fairly successful in its culture I venture to give the following brief directions founded on the practice I have adopted. Procure good sound bulbs, and select a rather dry and warm corner facing south in which to plant them, using a mixture of loam, leaf mould, and sand, covering not more than 2 inches deep, about the middle of October, well mulching with manure during the winter. Slugs are very troublesome in the spring, and disfigure the plants very much if left alone. A sprinkling of ashes will stop them if afforded every other day. The plant represented in the enclosed photograph was grown from a bulb planted in October, 1887. It has three stems about 8 feet 6 inches high, with from twelve to fifteen blooms on a stem.—T. TEBBY, *Welfield Gardens, Builth.* [The plant closely resembles one grown by Mr. Tebby, which was engraved in the *Journal of Horticulture*, March 7th, 1889, and represents good cultivation.]

— MR. E. S. DODWELL'S garden in Stanley Road, Oxford, is a CARNATION PARADISE. Time was when this veteran florist fought London fogs, smoke, and cats in a garden at the foot of a railway embankment in Clapham, and those who visited him there in years gone by will recall the wonderful results achieved under the difficulties engendered by such adversaries. In his pleasant provincial home Mr. Dodwell has surrounded himself with his favourite flowers, and given them such chances of doing themselves justice as few gardens afford. He has thousands of plants, embracing the best known varieties, and, as he tastes deeply of the fascinations of seedling raising, he also has numerous varieties as yet unknown to fame. The majority of the plants are not so severely disbudded as to be rendered useless as decorative objects, each carrying several good blooms. They are grown in 8-inch pots, the surface of the soil in each being covered with oyster shells, probably with the main object of conserving moisture. Structures of a somewhat novel character have been erected for the plants; they are quite open at the sides, but with glass roofs, now shaded with white netting, and the pots are stood on a stage about a foot from the ground, so that the flowers are at a convenient height for examination and inspection. For every Carnation lover, be he florist or not, there is a

rich store of pleasure in this garden. There are Carnations and Picotees all round, and if in looking over it such a prosaic thing as a few rows of Celery are discovered, it is felt that they have crept in surreptitiously, and that with the next batch of seedlings they will have to depart.

— IN 1883 the Californian output of dried Peaches was 600,000 lbs. In 1889 it was 3,200,000 lbs. During the same period Apricots increased in yield from 150,000 lbs. to 2,000,000 lbs., and Prunes from 500,000 lbs. to about 25,000,000 lbs.

— GARDENING APPOINTMENT.—We are requested to state that Mr. W. Guy, late foreman at Eysham Hall, Witney, has entered on his duties as head gardener to F. Townshend, Esq., M.P., Honington Hall, Shipston-on-Stour.

— HELENIUM PUMILUM.—This is a useful, hardy herbaceous perennial, with yellow composite flowers, and grows about 18 inches high. The flowers are about 2 inches across, freely produced, and are useful for cutting. H. autumnale is a taller grower, and blooms in September. They may be raised from seed.—E. D. S.

— SHARPE'S QUEEN PEA.—Allow me to say that I consider this one of the best Peas I have grown or seen. It has long well-shaped pods filled with from ten to twelve large Ne Plus Ultra-flavoured peas. I regard it as being equally good for the gentleman's table and the market gardener's basket. I have this year seen it at many shows, and always in the front rank. It is of medium height, a heavy cropper, and of unquestionably good quality.—D. LUMSDEN, *Bloxholm Gardens*.

— ACCORDING to *Le Jardin* it would not do to take ENGLISH DECORATIONS for models, but, it adds, "Our neighbours make very graceful crowns by employing *Arum æthiopicum*, *Lilium Harrisii*, and *Stephanotis floribunda*, plants which are not cultivated at Paris for cut flowers." While acknowledging the compliment, we may add that it would be as unwise for us to follow the nomenclature of our neighbours as it would be for them to copy our methods of decoration. What is meant by *Arum æthiopicum*? Probably the so-called *Arum Lily*, but that is *Calla*, or *Richardia*, *æthiopica*.

— ANNUAL CHRYSANTHEMUMS have been, and still are, in great demand in Covent Garden Market. While calling at Mr. E. F. Such's extensive hardy plant nursery at Maidenhead last week a Journal representative observed a bevy of women at work among a large square of these gay flowers, cutting and bunching them for market. Thousands of bunches have been cut during the past two months, and the demand still continues. There is a bright and cheerful appearance about a bed of these flowers which should render them acceptable in many gardens where they now have no place. The colours vary considerably, some being yellow with a dark central ring, others rich velvety crimson or brown. Treated similarly to other hardy annuals—that is, sown where they are to flower out of doors as early in April as the weather permits, they soon come into profuse and continued bloom.

— CUCKFIELD COTTAGERS' HORTICULTURAL SOCIETY.—This year the twenty-ninth annual Show was held by kind invitation of T. W. Erle, Esq., in his grounds at Mill Hall, on Wednesday, the 13th inst. The cottagers' exhibits were of the usual fine quality, and the neighbouring gentry sent liberal supplies of plants, as did also some half dozen men in the trade, altogether making a good display. Amongst the few special prizes for gardeners most interest was evinced in the keen contest for Messrs. Sutton's prizes for a tray of vegetables. It was decided in favour of Mr. George Stringer, gardener to R. A. Bevan, Esq. (President of the Society), Mr. Manton being a very close second. As if to make up for last year's wet day, the weather was all that could be desired. Mr. and Mrs. Erle entertained the *élite* of the neighbourhood to an "At Home," which was well responded to. In the evening the whole of the garden was thrown open to visitors.

— NEW RECREATION GROUND FOR BEDFORD.—At the request of the Bedford Corporation plans have been prepared by Messrs. W. Barron & Son, landscape gardeners, of Barrowash, Derby, for laying out their Mill Meadows Estate as a public recreation ground. The Estate consists of a long and rather narrow strip of land between the upper and lower streams of the River Ouse, about thirty acres in extent, the whole of which is now subject to floods, with the exception of a few acres at the upper end which have been raised. The scheme which has now been submitted will obviate these floods for the future. Both

the upper and lower stream will be widened, and a weir constructed 100 feet wide, spanned by a rustic bridge. The plans also provide for an ornamental lake about three and a half acres in extent, connected with the upper stream. There is already a public park in Bedford nearly seventy acres in extent, which was laid out and planted by Messrs. Barron in 1884.

— DEATH OF MR. HENRY BENNETT.—Rosarians will learn with deep regret of the death of Mr. Henry Bennett of Shepperton, the famous raiser of seedling Roses, and the announcement will come somewhat as a surprise, for he was a man of apparently robust physique, and by no means advanced in years. Mr. Bennett was at one time a farmer near Salisbury, but subsequently took up Rose growing, with results that must be familiar to the great majority of lovers of the Queen of flowers. As a raiser of Pedigree Roses he had done valuable service to the horticultural community. The great H.P. *Her Majesty* almost caused a sensation in 1882, and Mrs. John Laing, shown in 1886, is proving of sterling merit. In the following year came his charming Tea Princess Beatrice, and last year his new Tea Cleopatra was offered for the first time. The Polyantha Roses Golden Fairy and Little Dot, also raised by Mr. Bennett, were greatly admired on many occasions when exhibited by him. These are only a few out of many of his seedlings. Mr. Bennett was for some time on the Floral Committee of the Royal Horticultural Society, and a few years ago he journeyed across the Atlantic for a tour amongst American Rose growers, by whom he was very heartily received. He was a man of quiet and unassuming manner, but has left behind him results of patient and persevering work that will not be forgotten for generations.

— DOES FRUIT GROWING PAY?—Fruit growing as a whole, says an American writer, is, without doubt, a profitable occupation; yet the majority of farmers who engage in it are probably disappointed because their expectations have been placed so high that the result must necessarily fall below their hopes. Estimates for future profits are often based upon prices received in the home market for fruits brought from a distance. Especially is this true regarding small fruits. The grower naturally reasons that his home-grown fruit will go into the market in so much better condition than that which is shipped from a distance that it will bring quite as good a price, even if somewhat later in season. But by the time his trees are grown and his fruit is ready for market the conditions may have changed. Some other grower, not so very far away, may have found the excellent opening offered by the same market, and is there as a competitor. His neighbours have been inspired by the same idea at about the same time, and are hardly a season behind him with their products. Or his first crops, owing to imperfect methods of cultivation and handling, knowledge of which can only be obtained by experience, have failed to come up to the high standard of his hopes.

— THE writer goes on to say:—These drawbacks may lead him to the conclusion, if he is a man easily discouraged, that fruit-growing is not profitable. Yet, with all these discouragements, it is strongly probable that his trial acre of Strawberries, or Currants, or Blackberries has paid a better net profit than any possible acre of Wheat, or corn, or meadow. If the acre of fruit has not made a fortune, it has at least indicated the road to a better income. If the crop was Strawberries, the experience gained will enable one to duplicate it to better advantage, with a better knowledge of the most desirable varieties for his locality. Then another acre may be put in Raspberries and Blackberries, which will follow the Strawberries in the season of harvesting and marketing. One each may be put in Currants and Gooseberries, which among small fruits best bear shipping, and will enable the cultivator to test the value of other markets after the home trade has been supplied. Plums, Cherries, Peaches, &c., will follow in their natural order, until the fruit farm, large or small, becomes an accomplished fact, and then, if it is managed as a systematic business, it will be strange indeed if it does not yield a handsome return for the capital and labour invested.

— THE writer concludes:—Fruit is every year becoming more plentiful in our markets, and the increased consumption keeps pace with the supply. If this condition forbids great profits to the individual specialist in fruit culture, it improves the chances for the many, and is for the best interest of agriculture at large. It is better that many should be able to acquire a competence than that one should make a fortune, and it is one of the benign influences of our progressive agri-

culture that we can put within the reach of all classes the most wholesome of foods. Fruits which were once known only as delicacies by the masses are now upon their tables daily in their respective seasons. As our population increases, farmers all through the great eastern and middle sections of the country cultivate mainly the smaller and more delicate products of the soil. The orchard, the garden, and the dairy will take the place of grain fields; and the farmer who plans to follow this line, content with moderate returns, will not be the one to exclaim that fruit-growing is unprofitable.—(*American Agriculturist*.)

— THE POTATO DISEASE IN IRELAND.—A daily paper publishes the following gloomy intelligence:—"At the last meeting of the Westport Board of Guardians, Father O'Connor, P.P., Achill, said the Potato crop in Achill had failed entirely. It had been destroyed by the rains of the past three months. Mr. Denver stated that he had a distinct recollection of the great famine of 1847 and 1848, and he never remembered since then a worse appearance of the Potato crop than this year. The people had no Potatoes nor had they fuel. There were twenty Guardians present at the meeting from every part of the Union, and all agreed that the present condition of the Potato crop threatens a serious famine this winter. A resolution urging the speedy carrying out of a railway line from Westport to Mulranny, with a view to give employment and relieve the distress, was adopted unanimously. The spread of the Potato blight is daily becoming a matter of increasing anxiety to the people along the western seaboard, and each day's rains adds to the probability of widespread destitution along the west coast. The Tuam Board of Guardians have passed a resolution calling on the Local Government Board to inquire into the matter, and similar resolutions, some of them expressing the gravest apprehensions, have been passed by the Newport (Co. Mayo), the Swinford, the Killala, and the Galway Board of Guardians. In the neighbourhood of Glenties (Co. Donegal), Potatoes have been almost completely destroyed. Equally unfavourable reports come from south and west Cork, and altogether the prospect is very discouraging."

— PRIMULAS.—At the last meeting of the Walkley Floral and Horticultural Society, Mr. William Marshall read a short but pithy paper on the cultivation of the Chinese Primula. A few of his remarks applicable to the present time of the year may be noted. The compost for the flowering stage should consist of two parts fibrous loam, one part leaf soil, and one part silver sand, with a dash of Beeson's manure or bone dust. This well mixed will be greatly improved if allowed to remain on the potting bench three or four days before being used. He recommended 48-size pots for the plants, and moderately low potting, to allow of a light top-dressing later on. After potting the plants are placed in a cold frame partially shaded, keeping it closed for a time; after which the lights are removed, but placed on again in the case of heavy rain. About the middle of September they require to be taken into the greenhouse, and that is the time to apply the top-dressing. The free use of charcoal is good for the double varieties. They soon make roots into the top-dressing, and that prevents the swaying about of the plants, and renders them less liable to decay in the winter months. The temperature for November, December, and January should range from 45° to 50°, and as the days get longer 5° higher. Among the best of the double varieties he recommended Marchioness of Exeter, a plain leaved variety with red stalks and beautiful white flowers; White Lady, Alba plena, Prince of Wales, and Snowflake.

— THE PHYLLOXERA IN FRANCE AND GERMANY.—A Paris correspondent telegraphs:—"The phylloxera has invaded the Department of the Marne, whence comes all the French champagne. The Prefect of the Department has sent a report on the subject to the Minister of Commerce, which leaves no room for doubting the evil news. He says that the Vines over a band of country extending from Vincelles to Treloup have a pale yellow tinge instead of their natural green, and that the small fibrous roots are covered with nodosities. The Minister has sent M. Douthe, a professor of agricultural science, who studied the phylloxera in the south of France, to Epernay. He is instructed not to hesitate if he judges well to apply the Government rules for stamping out the disease. The Prefect says the whole country is terrified at the visitation." A Berlin correspondent telegraphs:—"The phylloxera has appeared on the Rhine, and the vineyards at Mayence, Bieberich, Rudesheim, Bingen, and other places are attacked. Great alarm prevails amongst the Vine growers."

— THE 1890 FRUIT CROP IN AMERICA.—The New York *Mercantile and Exchange Advocate* says:—"As the season advances more

complete reports from various sections indicate that the general fruit crop of 1890 will be the smallest for many years, which is to be regretted, from the fact also of a general feeling of depression in agricultural interests throughout the country. One favourable feature, however, is that those having partial crops will find their net results at the end of the year about equal to the seasons of full crops. This has been the result of the present truck crops in the South, which were likewise seriously damaged by the early frosts, but very remunerative prices have prevailed, and the expenses of harvesting and shipping have been materially lessened. This will be true of the fruit crops, and more attention can be given to the gathering and packing, and by thus improving the quality of the shipments their value may be enhanced. The loss most seriously felt by dealers and consumers generally will be that of the Peach crop, which is almost a total failure in all sections of the country except California, and it will be considered a luxury the present season. Its most natural substitute, the Pear, is also a general failure. The same severe frost which destroyed the Peach crops also blasted the Pear buds, and the late reports from many of the large Apple sections in the Hudson River counties and western New York state that a great deal of the young fruit is dropping from the trees, and there are indications of a short product from this principal source of supply. The early crops of fruits, such as Strawberries, Raspberries, and Currants, thus far have been unusually short, and seem to have fruited very lightly, which is also accounted for by the open winter, and then being followed by the severe frost during the time of the early development of the plants." The *American Agriculturist* says:—"Apples appear to be scarce in all sections, and prices are likely to rule high. The supply of new Apples has increased from Virginia, Maryland, and New Jersey. For the small lots arriving 4 dols. to 5 dols. per barrel is about the rate. Evaporated Apples are more inquired for, with sales at ten to twelve cents per pound. The Apple crop of Nova Scotia will be below the average this season. Great ravages have been committed by caterpillars, which have stripped whole orchards. The Canadian fruit crop promises to be a fair one on the whole. Peaches have escaped the warm and unfavourable weather of winter much better than in the great Peach-growing sections in the United States."

NEPENTHES BURKEI EXCELLENS.

THE beautiful *Nepenthes Burkei* introduced by Messrs. James Veitch and Sons from the Philippine Islands through Mr. David Burke, after whom it is named, proves to be an exceedingly fine addition to a genus exceptionally rich in noble forms. It is remarkable, too, for being the most variable species of *Nepenthes* yet observed, in proof of which two very striking deviations from the type were exhibited by the firm at the meeting of the Royal Horticultural Society on the 12th inst., under the names of *N. Burkei excellens* and *N. Burkei prolifica*. As distinguished from the type, the variety *excellens* (the subject of our illustration) has much larger and somewhat more cylindric pitchers that are more profusely and more richly coloured. The sharp-pointed lobed rim of the aperture is broader and of a rich chestnut red; the spots on the pitcher are larger and more numerous; the operculum or lid is also prettily spotted, while in the type this organ is almost destitute of spots. In strong contrast to the variety *excellens* stands the variety *prolifica*. This is a dwarfer plant that branches freely, the leaves are smaller, and the produced midrib is longer and more slender, so that the pitchers appear as if suspended by fine threads. The pitchers are much smaller than those of the type as well as those of the variety *excellens*, but are as richly coloured as the latter, especially the operculum or lid, on which the spotting is particularly attractive and distinct. An award of merit was granted last week by the Floral Committee of the Royal Horticultural Society to the variety represented, and we think it more than deserves the honour accorded.

SOUTH STONEHAM HOUSE.

THIS, the newly acquired residence of S. Montagu, Esq., M.P., President of the Royal Southampton Horticultural Society, has during the last few years become famous in the Southampton district for the excellent Grapes shown at the various exhibitions in the autumn in the southern part of Hants. Since the new owner came into possession on

the decease of the late Captain Davidson, many alterations have been carried out, especially in the grounds about the mansion, and all of them improvements undoubtedly.

The house is built of red brick pointed with stone, standing on an elevated site, from which is obtained a good view of the river Itchen and the hills in the distance. The river runs close past the foot of the grounds, another stream, Monks, connecting with the Itchen at Wood Mill, at which there is a capital salmon pool, which belongs to Mr.

pletely covered with its showy blossoms, which are white with a blood coloured spot at the base of each petal. The effect was grand. *Garrya elliptica* and *Bignonia grandiflora* also occupy positions on the same aspect. On the eastern end is a very fine mass of *Clematis montana* in excellent health, also of *Aristolochia siphon* growing luxuriantly. On the north or carriage front the walls are being fast clothed with various Ivies, conspicuous being *Regneriana* and *Gold Clouded*. A narrow terrace of grass runs along the south and east sides of the house, bordered

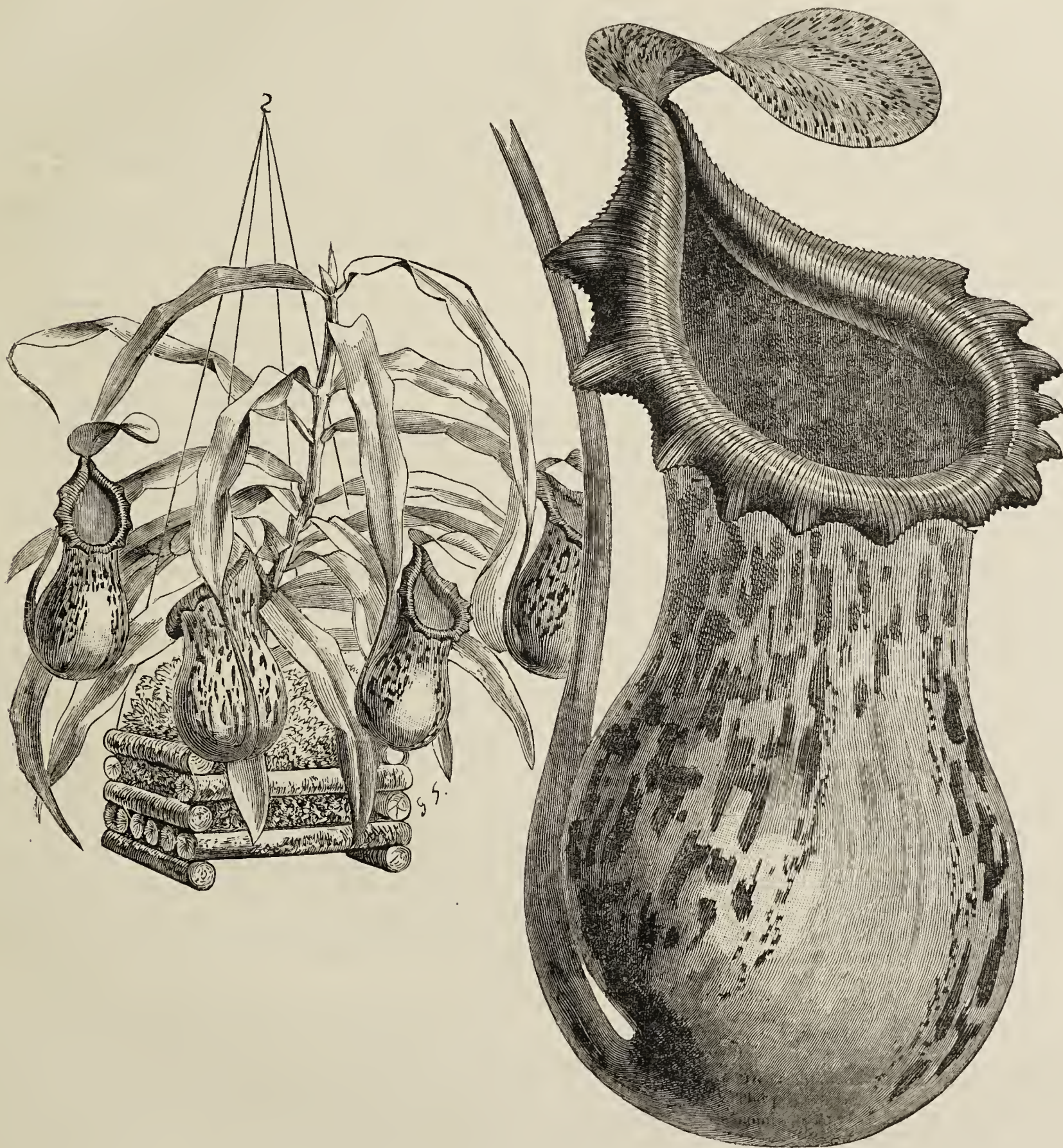


FIG. 21.—NEPENTHES BURKEI EXCELLENS.

Montagu, and from which I had the pleasure of seeing a splendid haul of fish taken on the morning of my visit. Something over thirty very fine salmon were caught in one day with the net. To return to the house. This is partly covered with climbers, some of them remarkably fine. For instance, on the south front a plant of *Aimée Vibert* Rose 40 feet high was covered with clusters of pure white flowers from top to bottom—a mass of snowy whiteness, agreeably set off by the deep green foliage. On a southern aspect there is no Rose which can vie with this for freedom of flowering and gracefulness of character. On the opposite side of the doorway is a wonderful plant of the *Gum Cistus*, nearly 20 feet high, and of proportionate width. It was com-

with a broad gravel path, which is kept scrupulously clean and firm. The gravel is a dark red, and 400 loads were laid down last year.

Extending in an easterly direction is a well kept tennis lawn, capable of accommodating four sets of players at the same time. On the south and east end of this piece of grass is a raised narrow mound of shrubs, the back entirely planted with common Laurels, now in rude health, and which are kept closely pruned every year. At the front of these are various kinds of evergreen shrubs, dotted here and there with *Acer Negundo variegata*, the border reaching probably 60 yards. The most remarkable feature about this is the brilliant display made all through the summer and autumn by the masses of *Tropæolum*

speciosum, with which the border seems full; the threadlike shoots entwine themselves amongst the shrubs the entire length of the border, and are covered with brilliant blossoms. This is a sight to be remembered. The northern aspect suits the growth of this *Tropæolum* to perfection. An Ivy-clad building on the same side was remarkable for the manner in which a plant of *Ecchreocarpus scaber* was growing at the base; the shoots, profusely covered with its orange red blossoms, came out in great relief in front of the Ivy, which made a capital background and also provided support for the entwining of the plant.

Passing the lawn and good specimens of Coniferæ and noble Elms, we find what was formerly a wilderness of Nut bushes and weeds transformed into a Rose garden, the boundary being formed with an herbaceous border edged with white Pinks, which are to be replanted every year to keep them small and neat. This makes a neat as well as a useful edging to such a border. The portion in the centre devoted to Roses mainly grown on the dwarf system is laid out in beds edged with Box, and narrow gravel paths between; the leading varieties were planted and are thriving well.

The kitchen garden is not large, but well situated; the soil, a deep loam resting on gravel, is very fertile, as is evinced by the crops of vegetables and the surrounding trees. A broad path leads through the centre of the garden, and on each end of it is a wide border filled with herbaceous plants. The quarters are well stocked with vegetables and fruit, heavy crops of the latter in all sections, but Plums and Pears, are to be seen, even the latter are represented by a fair crop. The Morello Cherry wall is especially worthy of note; it is situated behind the offices and faces almost south. The wall is 50 yards long, and is furnished from end to end and from bottom to top with trees as even as it is possible to find them, and with a crop of fruit as good as could be wished. The trees are in the best of health, and evidently the treatment accorded is of the right kind.

The glass department is not very extensive, but the houses are well built. A lean-to range running across the north end of the kitchen garden, and facing south, is divided into four vineries, each about 30 feet long, 18 feet wide, and about 14 feet high at the back, the remaining house being devoted to Peach culture. The trees have been newly planted, and are most promising. The Muscat Grapes, mainly of the Alexandria variety, and one or two rods of Madresfield Court, are bearing substantial bunches. Of the Cannon Hall variety there are bunches with extra large berries, but, as usual with this variety, Mr. Hall experiences a difficulty in obtaining a good set. Another house is mainly occupied with early varieties—Black Hamburgh, Buckland Sweetwater, Foster's Seedling, Black Prince, Madresfield Court, all in first-class condition. The last house of the range is devoted to late sorts, of which there are some very fine crops of Alicante, Lady Downe's, and Gros Colman, one bunch on the rod of the latter measuring 15 inches long, with large berries. Very fine are the bunches of Alicante considering that each cane carries a full crop of fruit, not a few sensational bunches. The Vines here have to produce fall crops, and as the Grapes are always remarkable for the exceeding high finish at the autumn shows they reflect all the more credit on their cultivation. Ample space between each rod is allowed, so that the foliage obtains abundance of light and air. The border is kept thinly mulched with fresh horse droppings, which induces surface roots in abundance.

Useful lean-to Cucumber and Melon houses are situated at the east end of the range, in which are also grown small stove plants suitable for dinner table decoration. A handsome new span-roofed greenhouse has lately been added, which is 50 feet long, 20 feet wide, and 12 feet high in the centre. This is filled mainly with soft-wooded plants, which are found useful for supplying the house with cut flowers. Mr. Hall deserves great credit for the manner in which every department is managed, and I am indebted to him for his courtesies during a hurried look round this interesting garden.—VISITOR.

STRAWBERRIES—A VOICE FROM AMERICA.

I HAVE been reading with great interest Mr. Hibberd's paper in *Journal of Horticulture* of July 10th, and am moved to enclose you a chapter of my own from the *Country Gentleman*, which may perhaps have an interest as showing some American aspects of the case. I am particularly interested in what our friend Mr. Hibberd says of the *Fragaria chilensis*, which goes commonly as the "Chili Strawberry." He speaks of the "Chili species deficient often in pollen," and I presume he means under cultivation. Now, I have never been able to find a plant of the "Chili species" under cultivation. Years ago we all thought the lighter fruited forms of the garden Strawberry were to be referred to the "Chili species," but since I have been able to see this species growing naturally in its sub-arctic home, and not merely know it from dried specimens, I have my doubt whether it is in cultivation—some little doubt whether the true species has ever been in cultivation at all.

I may say here, as a student in botany as well as one devoted to horticulture, that I am shy in accepting the numerous "species" as often given us; although we may grant in these "evolutionary" times that what is or what is not a species is neither more nor less

than the opinion of an expert, but we who have travelled thousands of miles over a country of the huge extent of ours, seeing "species" under so many different conditions, may be permitted to have a practical opinion, and we learn by a sort of *coup d'œil* to tell a species through all its varying forms. It is easy to tell a form of *F. vesca*, of *F. virginiana*, and of *F. chilensis*. In such forms as *F. canadensis*, *F. illinoensis*, *F. grandiflora*, &c., I should take no stock. In the Strawberry we usually have several common peduncles from the same plant. The first is rather long, the later one or more scarcely any. Anyone who has seen *F. chilensis* in its native places would scarcely mistake it, for the primary peduncle is seldom less than a foot, and the pedicels of proportionate length. The flowers are also enormously large, and the runners extend to a length unusual even in a Strawberry. The fruit, however, of a prevailing light tint, very little of the rosy character of our Virginian Strawberry, is no larger than the average of our wild Virginian fruit. The leaves are just on the other side of the Virginian. While the *F. vesca* has very highly plaited leaves on the one side of that species, the "Chili" has scarcely any plaits at all. The leaves are thick, smooth, and glossy.

Another reason why I doubt that the true Chili Strawberry in any form is in cultivation, is because reference is made to its occasional tendency to unisexuality. We find the tendency comes with decreasing vital power. The Strawberry loves the cool. When its vital powers are weakened by exposure to heat and drought the pistils are partially suppressed, and stamens are strengthened. The plantation becomes barren, not because the male plants outrun the females by reason of superior vigour, as stated by Mr. Hibberd, for the male plants are not more, but less vigorous, but by reason of the actual loss of power to produce pistils. There is no tendency in the wild "Chili" Strawberry to diœcism, and unless cultivated for a long time under unfavourable conditions in the comparatively favourable Strawberry climate of Britain, I should doubt the genuineness of the "Chili" plants.—THOMAS MEEHAN.

[We are pleased to hear from Mr. Meehan, and readily publish his observations on this subject. The following is the enclosure referred to:—]

DEGENERACY OF STRAWBERRIES.

Cultivators usually aim at something different from what Nature, unaided by man, desires, and hence we cannot always profit by what Nature teaches in the growth of plants. Still, we can profit by knowledge, though we may not always need to apply it at once. I never knew knowledge to hurt anyone. Even those who deride abstract knowledge are continually seeking it, and go to those—for some such information—whom they profess to hold in contempt.

One of these good, inconsistent souls said to me recently, "Can you tell me why it is that the further we go south the less success we have with the Strawberry? We never see there the fine luscious fruit we get in the Northern States; yet the soil is surely as good there as anywhere, and the cultivator gives them as much intelligent attention." "Because," I replied, "the 'Strawberry spot' prevails on the leaves to such a great extent." But I might as well talk to the winds. What did he know about "Strawberry spot," or in what way it had an injurious influence on Strawberry culture? Perhaps many of us who do not look on science as something pedantic, do not know quite as much about this as desirable. I have thought that a few lines on the subject might interest many readers.

Nature has placed the Strawberry where the earth is cool. Cultivated Strawberries are of three species—*Fragaria virginiana*, *F. vesca*, and *F. chilensis*. I doubt much whether there has been hybridism between these, though so stated in horticultural works. My own opinion is that our common garden Strawberry is *F. virginiana*—the commonest wild species pure and simple. This is confined to the lower lands, and is found in the shade of bushy thickets or among the cool grass in damp ground. *F. vesca* is the parent of the Alpine Strawberries. It is readily distinguished by an acute eye, through its much finer-plaited leaves. This is only found at low elevations in northern latitudes. As we go south, it is only found high in the mountains. Even in Mexico it finds a home in such situations. But wherever it is, its home is in the cool and shade. *F. chilensis* is a pale-fruited species, and it may have the parentage with which it has been credited of some of the pale varieties that used to be found in gardens. I have seen this in its greatest perfection in the far north-west, following in the wake of the receding glaciers. In these cool parts of the northern and southern hemispheres it has found its favourite home.

Now, the cultivator wants the Strawberry where it is not shady, and where instead of the soil being cool it rises to 80° or 90° before the summer is over. The power to resist disease we know as vital power, without understanding precisely what this power is. At

any rate, we say the vital power is weakened under these unnatural conditions, and in course of time the spot follows, and the variety "wears out." We have to get new varieties—not so much to improve the race as to keep it up to a fair standard. We have had hundreds of new kinds the past quarter of a century, all thought by good judges to be better than existing kinds, but really no better, and in many cases not so good as those they supplanted. I doubt if any variety now popular ever gave the yield Wilson's Albany gave—if any give the delicious flavour of Burr's Pine, or any compare in combined size, flavour, and productiveness with such as the good Dr. Knox of Pittsburg gave us in Jucunda. But these kinds are certainly no good now. Our nursery lost a good customer but a very few years ago through selling undoubted Albanys to a customer who ordered them, but could not be made to believe such worthless things were true. The new forms replace those which have degenerated, and will in turn degenerate and be replaced by others in turn. The wild forms in their cool shady homes can resist the "spot." We never see it on them, but after a few years of the heat of open culture their power to resist is weakened, and they fall an easy prey.

What is the "spot?" Botanists know it as a fungus, and name it *Sphaerella fragaria*. Prof. Dudley of Cornell has recently given



FIG. 22.—STRAWBERRY LEAF FUNGUS.

minutely its history, and the annexed cut is from the bulletin of the University.

This minute fungus pushes its way through the cells of the leaf interior, destroying the structure, and we are enabled to see the result of their work in the spots appearing about the time the fruit is setting. The leaves in this condition can only perform half their work, and the result is that the whole system goes down rapidly, and plants from them take the same course.

It is interesting to note how much longer some seedlings will resist the spot than others. Some will become affected in two or three years of open sun culture; others will be fungus proof for a number of years. We have had Sharpless for possibly ten years, and it is free from spot yet, but we do not expect to see it many years longer. But this was a seedling raised in the mountains of Pennsylvania, where from the elevation and consequent coolness the health of the parent plants must have been prime. The further we get south the longer the heat period, and the greater the enervation of the plants.

But, may say the caviller, what do we gain when this science has been taught? We must grow Strawberries even in hot places. We cannot pick out the spot-free places in mountain tops and shaded woods. True, but we can manage often without much great cost to shade the soil. The great success of Knox was as much because he kept the plants in dense rows, and kept a thick coat of straw between to shade the ground, and the most wonderful fruit and wonderful crop on the most wonderful spot-free plants I ever saw was many years ago at York, Pennsylvania, where the owner put several inches deep of corn stalk between the rows.

One can readily understand that in many places where Strawberries are largely grown corn stalks are scarce, and straw not to be had, but in small blocks where excellence is desirable without regard to a little extra cost it is another thing.

In any event it can certainly do no harm to know that great heat is an unnatural condition for the Strawberry plant; that under such conditions the vital power of the plant becomes enfeebled; that when enfeebled, a fungus that causes the Strawberry leaf-spot attacks them; that when the fungus gets a good hold the variety "wears out;" and that in order to keep the race up to a fairly respectable standard new varieties must be continually introduced to replace the enfeebled ones.—THOS. MEEHAN, *Germantown Nurseries, Philadelphia*.



AMATEURS' CLASSES.

YOUR correspondent, "Novice," in the last issue of the Journal, directs attention to the necessity for more classes for amateurs in Chrysanthemum schedules, and states that he has been thus far unable to find special provision for amateurs in any schedules that have come under his notice. If he will kindly send me his address I shall be very pleased to forward to him a copy of the schedule of the National Chrysanthemum Society, and therein he will find some nine or ten classes specially for amateurs. These are divided into two sections, one being for amateurs who have no paid assistance, and the other for amateurs who employ not more than one permanent gardener. I venture to hope that such classes will fulfil the requirements of "Novice." I may perhaps state that amateurs form a very large element in the composition of this Society, and that classes of the kind I have referred to are likely to be increased rather than otherwise.—WILLIAM HOLMES, *Hon. Sec., Frampton Park Nurseries, Hackney*.

EARWIGS AND CHRYSANTHEMUMS.

EARWIGS should be hunted down by placing for them hiding places where they can crawl into at the approach of day. Besides searching for them among the plants with a light at night, simple contrivances—such as hollow broad beanstalks and folded strips of brown paper—are placed among the plants, and the old and excellent plan of placing a small inverted flower pot, with a little dry hay or moss in it, on the top of a stake near the plants, from which the insects can be shaken every morning, may be adopted.—E. D. S.

PLANTS AT MAIDENHEAD.

MR. ROBERT OWEN'S Chrysanthemums are well known in circles devoted to the Autumn Queen. He has a large collection of plants, comprising, perhaps, 3000, and they are at the present time in remarkable health and vigour, having made splendid growth. The majority are arranged in large blocks screened by hedges of Scarlet Runners and Lombardy Poplars. Many are seedlings. The new American variety, Harvest Queen, which (report says) is going to be an improved Elaine, owing to its better habit, is promising remarkably well, and so far as growth is concerned is all that could be desired. Amongst those in bloom the best are Miss Phyllis Broughton, a large white Pompon; Golden Shah, excellent in colour and very free; Goldsmith, also very bright and floriferous; Flora, a useful old yellow; Jacintha, lilac; Mr. Selly, blush, yellow centre; and Mrs. Hawkins.—W. P. W.

AN OLD CHRYSANTHEMUM BOOK.

A copy of an exceedingly interesting book on Chrysanthemums was recently placed in my hands, and a few notes respecting it may be worth a little space. The title itself is a curiosity—one of the old style as to length. It runs in this way:—

"A Treatise on the Cultivation of the Chrysanthemum for the Production of Specimen Blooms, with an enumeration of the best Varieties, founded on the experience of G. Taylor. To which is added a list of the best sorts of those let out in 1851 and 1852, with cultural hints and descriptions of a selection of Pompon and Anemone varieties. Second Edition. London: Printed for and published by the Author, Park Street, Stoke Newington, Middlesex."

The book is a small one, consisting of sixteen pages, the printed matter of which is 3 inches wide and 5½ deep; so that it is evident the author did not try to expand his subject unduly. He commences modestly, and observes:—"My desire is to foster that enthusiasm which is now manifest in favour of a flower which is now claiming the attention of the admirers of floriculture—one worthy of being more extensively cultivated for competition, especially as it serves to enhance the beauty of our conservatories and gardens during a season of the year when the greater portion of floral beauty is absent, and to increase a love for its cultivation." Turning to the culture, Mr. Taylor recommended striking cuttings as early after flowering as possible, and advises a cold frame as a more suitable place than a heated structure. Potting is performed at the end of March, employing "one-third yellow loam, one-third rotten turf, and one-third decayed manure, adding sufficient rough sand and grit to make the whole porous." The cuttings were rooted in 3-inch pots and shifted into 6-inch pots and then placed out of doors. The final potting was done at the end of June or beginning of July into 11-inch pots, which were plunged two-thirds in the ground. The liberal supply of water is advised, and the application of liquid manure (the drainage of stable manure) was commenced at the end of August. Guano was also used at the rate of half a pint to eight gallons of soft water; but all supplies of this kind were stopped when the blooms commenced expanding. Disbudding and "taking the bud" are noted, and the ravages of earwigs are described and the beanstalk traps used by the author. It is also mentioned that the varieties which flower early will have to be kept "in the shady part of the greenhouse till the exhibition, which at Stoke

Newington is the third week in November," an unusually late date for a south county show.

Numerous varieties are named for different purposes, some of which may be included. Some of the names are erroneously spelled, but are given here in the form they are printed. For instance, those recommended for outdoor culture are Aristides, Beauty, Campestrani, Clustered Yellow, Duke, King, Princess Marie, Pio-Nono, and Vesta.

A list is also given of varieties recommended for exhibition as cut blooms, which comprises several still well known in their respective classes, with others that have long since disappeared. They are as follows:—Annie Salter, Cyclops, Christine, Defiance, Dupont de l'Eure, Formosum, Gem, Goliah, Lysias, Nonpareil, Phidias, Queen of England, Rabelais, Rebecca, Sydenham, Themis, Two-coloured Incurved, and The Warden.

The list of varieties sent out in 1851 include Arc en Ceil, Guillaume Tell, Madame Corbay, Marshal Ney, Madame Aubry, Miss Kate, Monge (reflex) Plutus, Racine, and Rosa Mystica—fine broad petals, similar in form to Vesta, very light rose.

Varities sent out in 1852:—Astrolabe, Alcibiade, Christophe Columbe, Fortune, Leon Laquay, Lingot d'Or, Nell Gwynne, Pouche d'Or, and Rautonette.

These are all more or less cupped or incurved flowers.

In a chapter on the qualities of the Chrysanthemum he says: "As regards the properties which constitute a perfect flower, I consider that each petal should be broad, thick, smooth at the end, and a little cupped or curved, but not so as to show the under part too much; the centre should be good, the whole flower forming a little more than half a ball. Vesta, in my opinion, nearest approaches these properties."

As the best light Anemones he names Gluck, Fleur de Marie, Nancy de Sermet, Madame Godereau, Marguerite d'Anjou, Reine Marguerite, Avæoliflorum and Junon.

Several other lists are interesting, notably that of Pompons, introduced in 1846 by Mr. Fortune, comprising Argentine, Asmodée, Autumnna, Circe, Colibir, Cybele, Daphnis, Elise Miellez, Gil Blas, Henriette Lebois, La Jongleur, La Ficance, La-nain-bébé, Madame de Merbel, Maria Taillard, Modèle, Ne Plus Ultra, Piquillo, Perfecta, Roi de Lilliput, Sacramento, Surprise, Solfaterre. Pompons sent out in 1852 include Beauty of Toulousaine, Bouquet parfait, Chedevielle, Dame Blanch, Graziella, Hendersoni, La Rousse, La Vapuer, Lais, Phœbus, President Decaisne, Quasimodo.

In the course of the book Mr. Taylor states that in 1852 he was "Awarded at the Stoke Newington show first prize for twenty-four flowers, silver cup, value 5 guineas; also in 1851, first for twenty-four, twelve, and Anemone varieties." The copy I have was only lent, but I should like to procure one myself, either by purchase or exchange.—C.

HORTICULTURAL SHOWS.

TAUNTON DEANE.—AUGUST 12TH.

THE usual good fortune which attends this Society in respect of weather did not fail it even in this very uncertain season, and when so much depends on this important factor in an open air fête as this Show is, it is of course a subject of hearty congratulation on all sides when the weather is fine; and truly this is the fête day for the beautiful west county town. It is the day of the year. The buildings blossom out in bunting in all directions, the streets are thronged with people, the market place is turned into a fair, and special trains bring a large number of visitors from places as far distant as Bristol, while waggons, vans, and traps of all kinds bring in the country people from the neighbouring villages in large numbers. This must not, however, all be set down to love of horticulture. The grand firework display brings a large number of people, although the dense crowd which thronged the tents in the afternoon clearly showed that a great deal of interest was excited in this beautiful annual display.

The Show was of its usual extensive character. A tent for the open classes, another for amateurs, a third for fruit and vegetables, a fourth for cottagers, and a fifth for table decorations and bouquets, were proofs of the great extent and comprehensive character of the Exhibition. There was also a bee Exhibition, so that everything was done to meet the tastes of the visitors, while the excellent band of the Royal Marines discoursed most lovely music.

Like most other places the character of the Exhibition has considerably altered; one by one the amateur exhibitors of large stove and greenhouse plants are disappearing, and since last year Mr. Cleave of Crediton has given them up. These changes made a considerable difference, and the main stay of this part of the Exhibition was Mr. James Cypher of Cheltenham, whose plants were of the usual wonderful character; indeed, there were miles between him and the second prize.

On entering the large tent the first point of interest was the beautiful stand of Gladioli exhibited by Mr. James Kelway of Langport, our great English raiser and cultivator of that splendid autumn flower, whose culture of twenty-four acres shows to what a great extent his love for the flower has led him. The spikes exhibited were, as is usually the case with him, nearly all his own seedlings. Shakespeare, Horace Vernet, and one or two others being the only French varieties shown. Some of these seedlings were very beautiful, Lady Carrington being especially fine. Three of these were selected for certificates—Mr. Fowler, Semolina, and Dradacia. The first of these is a very novel flower of the Eugène Scribe shade of colour, but larger, finer, and more distinct in its colouring than that fine old flower. It is many years since Mr. Kelway and myself first met, and I do not think that either of

us is one whit the less enthusiastic about the Gladiolus than we were. We differ in some points in connection with it, but certainly not in our love for it. In this large tent so worthily opened by this collection were placed the large flowering stove and greenhouse plants of Mr. Cypher and others, while around the sides on stages the Zonal Pelargoniums, the Begonias, and others, on one side, and the collection of cut flowers, Roses, Dahlias, Asters, Verbenas, Hollyhocks, &c. Mr. Cypher's twelve flowering plants consisted of the following sorts:—Ixora Regina, Ixora javanica, Clerodendron Balfourianum, a large and beautifully flowered plant; Statice profusa, Ixora Jubilee, Erica Austiniana, Allamanda Hendersoni, Erica Irbyana, Bougainvillea glabra, Allamanda nobilis, Ixora Duffi, Erica tricolor coronata, and Stephanotis floribunda.

In the class for six stove and greenhouse plants in bloom, Mr. Cypher was again first with Erica Macnabiana, Statice profusa, Allamanda grandiflora, Erica Turnbulli, Ixora coccinea, and Erica Irbyana; and also in the class for fine foliaged plants, with Latania borbonica, Anthurium Veitchianum, Croton Sunset (a grandly coloured plant), Cordyline indivisa, Croton angustifolium, Kentia Fosteriana, Croton Victoria, Cycas revoluta, Dasyllirion, and another. The centre of this tent was filled up with exotic and hardy Ferns, Lilies, Fuchsias, Selaginellas, and other plants of more or less interest. There is, however, very little change in the plants from year to year. Instead of, however, being placed on the stages, they were on the ground, where they are not seen so well although the flowers are, yet the effect is not so imposing as when they are placed on stages. Nowhere do I see the Zonal and Nosegay Pelargoniums so well exhibited as here. They are one mass of flower; not, as generally seen, large green plants with half a dozen trusses of bloom.

In the second tent, which was devoted to amateurs, the first object on entering was a fine stand of choice plants of Liliums, Begonias double and single, cut blooms of Carnations and Picotees, and decorative plants of various kinds. This made a very imposing display. Here again the large specimen plants in flower, fine-foliaged plants, Ferns, &c., occupied the space, and in fact the whole tent was a repetition on a somewhat reduced scale of the former tent; and here, as there, the cut flowers formed a very special feature. Begonias, especially the doubles, were well represented; those in the first prize lot from Mr. W. H. Fowler of Claremont being remarkably fine. They consisted of Lord Lonsborough, Glow, Sulphur Queen, and Taber.

It was in this tent especially that the loss of such exhibitors as Mr. Cleave and Mr. Lawless was especially felt, for although the plants shown by Mrs. Pearce, and others were very good, they have not yet reached the colossal proportions of their predecessors. She exhibited fine well bloomed plants of Phœnocomma prolifera, Anthurium Andrea-num, Clerodendron Balfourianum, and the plants which are usually shown at this season of this year, and we may soon hope to see them equalling in grandeur the plants formerly exhibited.

I have rarely seen Roses shown so well at this season of the year, the Teas being especially good; in fact our Tea champion, the Rev. F. R. Burnside, exhibited a stand of which he need not have been ashamed had he shown at the very height of the Rose season. The H.P.'s were also very good, but as usual at this time they displayed a certain lack of fulness and brilliancy, but withal that there were some excellent blooms. In the class for forty-eight singles Mr. Prince of Oxford was first with the following—Dupuy Jamain, Baron Bonstettin, Prince Arthur, Baroness Rothschild, Souvenir d'Elise Vardon, Queen of Queens, Devienne Lamy, Ulrich Brunner, Mrs. John Laing, Alba rosea, Gabriel Luizet, Maréchal Niel, Comtesse de Nadaillac, Countess of Oxford, The Bride, Madame Hoste, Xavier Olibo, Marie Verdier, Madame de Watteville, Niphotos, Catherine Mermet, Grace Darling, Duke of Wellington, Earl of Dufferin, Alfred Dumesnil, Marie Rady, La France, Victor Verdier, Victor Hugo, &c. Messrs. Cooling & Son of Bath were second in the class for twenty-four trebles. Mr. J. G. Budd of Bath was first with good blooms of Alfred Dumesnil, Her Majesty, Marie Rady, Mrs. J. Laing, Ulrich Brunner, The Bride, Prince Arthur, Alfred Colomb, Marie Van Houtte, François Michelin, A. K. Williams, Alba rosea, Duke of Wellington, and Her Majesty. Mr. H. Phillips was second.

In the amateurs' forty-two singles Mr. S. P. Budd was first with François Reve (?), Eugène Verdier, Earl of Dufferin, Alfred Dumesnil, Marie Cointet, Lady Helen Stuart, Catherine Mermet, Madame C. Wood, Louis Van Houtte, Alba rosea, A. K. Williams, Madame G. Luizet, François Michelin, The Bride, Niphotos, Louis Baron, Mrs. J. Laing, Ulrich Brunner, &c. The veteran florist, Mr. Hobbs, of Lower Easton, Bristol, was second. In the class for twelve varieties, the Rev. F. R. Burnside was first with clean and beautiful blooms of Souvenir d'Elise, Anna Ollivier, Marie Van Houtte, The Bride, Catherine Mermet, Madame Bravy, Hon. Edith Gifford, Francisca Kruger, and Etoile de Lyon. This was a very beautiful box, and excited general admiration. Mr. Burnside also took the first prize for Teas with a still more beautiful stand, consisting of the Hon. Edith Gifford, Catherine Mermet, Souvenir d'Elise (this was a grand bloom of great depth of petal, and perfection in shape), Madame Lambard, Marie Van Houtte, Innocente Pirola, Souvenir d'un Ami, and Madame Burnside—a most lovely stand.

There are several stands of Gladioli exhibited in this tent, but that brought by W. Herbert Fowler, Esq. of Claremont, Taunton, was far ahead of the others. It contained the following French varieties:—Tour du Monde, Atlas, Distinction, Sceptre de Flore, Nereide, and Pollox. As this was Mr. Fowler's first exhibit of this beautiful autumn flower it deserves especial notice. The spikes are long, well formed, and good in colour, reminding one of the days when Mr. Debreë used to exhibit.

Table decorations and bouquets are always a strong feature at the Taunton Show, where a tent is appropriated to them on this occasion. Four tables were arranged, the first by W. B. Cleave, Esq., although it might not meet the requirements of the fashion of the day, which requires the decorations to be low and the flowers all of one colour, was, I think, in the very best of taste. It might have been set up (and I could give it no higher praise) by Miss Cypher in her best days, the main feature being three tall centrepieces most gracefully filled with light and elegant flowers, such as *Francoas* and *Pancratiums*, while the bases were well filled with more solid flowers, *Dipladenias*, &c. The second table was more remarkable for the quantity of lamp and candle shades than for anything else, while the third erred on the side of poverty. Simplicity is all very well, but to decorate a table with the common wild Poppy and with Grasses is a little too meagre for effect. A line must be drawn, and I think it may be drawn at wild Poppies, which, moreover, are objectionable for their smell. The hand bouquets were large, too large I think, but then the wording of the schedule was curious—"a hand bouquet suitable for a drawing room." The first prize was awarded to a very beautiful one, consisting of white flowers. The single stands for dining rooms were also of very great merit, the first with its beautiful bits of *Gloriosa superba*, *Pancratiums*, and *Francoas*, was light and elegant. There were also some very excellent bouquets of wild flowers, some of them very tastefully arranged.

Other cut flowers—*Dahlias* (Show, Fancy, single, and Cactus), *Asters*, and *Hollyhocks* were well shown, especially when the season is taken into account. Some very beautiful *Carnations* and *Picotees* were shown by Mr. H. Fowler, not, of course, quite up to the mark of the well dressed blooms that are set up by Mr. Turner and Mr. Douglas, but still very beautiful; the yellows, such as *Dorothy*, Mrs. Reynolds Hole, *Terra Cotta*, and *Agnes Chambers*, being much admired. He also secured the first prize for Cactus *Dahlias*, while in the Show varieties it was pleasant again to see Mr. Hobbs holding his own.

During the many years that I have been permitted to visit Taunton I have seen many changes in the *personnel* of the Society. Presidents, Secretaries, and Committees have all changed, but through all there has always been manifested a kind and courteous consideration for exhibitors and Judges, and never has this been more shown than under its present arrangement. The young and active Secretaries, Messrs. Maynard and Hammet, exerted themselves to their utmost to make all go smoothly, while the Committee worked heartily for the same good end, with the usual result that attends such efforts, good will and kindly feeling all round.—D., Deal.

Fruit and Vegetables.—The exhibits of fruit and vegetables by professional gardeners fully filled the large tent, and a grand lot of produce was staged, the competition being very keen throughout. In the premier class for fruit, or that for a collection of ten dishes, Mr. W. Iggulden, gardener to the Earl of Cork, Marston House, Frome, was placed first, having exceptionally well coloured *Madresfield Court* and fairly good *Muscat of Alexandria* Grapes, a good *Smooth Cayenne* Pine Apple, handsome *Blenheim Orange* Melons, fine *Sea Eagle* Peaches, Lord Napier *Nectarines*, *Brown Turkey* Figs, *Hemskerk* Apricots, *Jargonelle* Pears, and *De Montfort* Plums, all in good condition and well coloured. Mr. J. Lloyd, gardener to Vincent Stuckey, Esq., Hill House, Langport, was a close second, his collection including good *Madresfield Court* Grapes, *Smooth Cayenne* Pine Apple, *Dymond* Peaches, and fine *Brown Turkey* Figs. Mr. Crossman, gardener to J. Brutton, Esq., Yeovil, was third. There were eight entries in the class for four varieties of fruit, Mr. Iggulden again being placed first; Mr. Daffurn, gardener to Donald Cox, Esq., Weston-super-Mare, being a good second, and Mr. Webber, gardener to G. F. Luttrell, Esq., third, all having excellent dishes throughout. The first prize for a Pine Apple was awarded to Mr. Nicholas, gardener to Earl Fortescue, Castle Hill, Devon, who had a grand fruit of *Smooth Cayenne*. The competition with *Black Hamburgh* Grapes was close, great size of berry and good finish gaining Mr. E. T. Hill, Bristol, the first prize. Mr. Iggulden was second, and Mr. Lloyd third, both having excellent examples. In the any other black class Mr. Iggulden led with well finished *Madresfield Court*, Mr. Lloyd being a close second, and Mr. Daffurn third, both having the same variety in good condition. White Grapes were not so satisfactory. Mr. Lloyd was well first with *Muscat of Alexandria*, Mr. Iggulden second, and the Rev. Spekes-Mules, third. With any other white variety Mr. Luttrell was first with *Buckland Sweetwater*, Mr. Iggulden second with *Foster's Seedling*, and Mr. C. Cooper, gardener to G. L. Collard, Esq., third. Melons were fairly good. Mr. Crossman was first with *Hero of Lockinge*, and Mr. G. Bridge second with the same variety. A handsome dish of *Grosse Mignonne* gained Mr. Daffurn the first prize for Peaches, Mr. Crossman being second. The last-named took first for a grand dish of *Pine Apple Nectarine*, the second going to Mr. Daffurn for handsome fruit of *Elruge*. Mr. R. Huxtable, gardener to T. M. Newton, Esq., was first for Apricots, and Mr. Iggulden second. Cherries, principally *Morellos*, were very fine, but these were quite eclipsed in every way by a grand dish of *Castle Hill Seedling* staged by Mr. Nicholas. Plums, Pears, Apples, and other hardy fruit were also well represented.

Vegetables were exceedingly numerous and good in quality, though a tendency to coarseness is always noticeable at the Taunton shows. Mr. Webber and Mr. W. Every were placed equal first for ten varieties, though the former certainly had the best collection. Each had several extra good dishes of popular varieties. Special prizes were also offered for collections of vegetables by Messrs. Webb & Sons and Messrs. Sutton & Sons, each attracting good competition. For the former Mr. H. Moore was first, Mr. J. F. C. Parsons second, and Mr. D. E. Perkins

third. Mr. Moore was also first for Sutton's prizes, Mr. G. Lock being a good second, and Mr. G. Ricks third. Tomatoes were remarkably fine. Mr. Wills was first for a single dish, and Mr. G. Lock second, both staging *Perfection*. Messrs. Lloyd, Crossman, Drayson, Madley, Turner, Bryant, and Gibbs also exhibited successfully in the various other classes for vegetables.

MAIDENHEAD.—AUGUST 14TH.

THE twelfth annual Show of the Maidenhead Horticultural Society was held in the grounds of Curtisfield, Maidenhead, on the above date. Without displaying any features of a special character, it brought together a collection of exhibits, both flower, fruit, and vegetable, of good average merit. Flowering and foliage plants, cut flowers, fruit, and vegetables were all well shown. It would appear from the annual report that the financial position of the Society is not entirely satisfactory, the balance-sheet showing a deficit in 1889, following a still more serious one in 1888. It is to be hoped that the present year will yield an improvement, as a continual "down grade" movement in money matters cannot always go on. Possibly the unsatisfactory financial position may have led to economy in the matter of schedules, for it proved a difficult matter to obtain one from the Secretary, Mr. O. King. Another official, however, proved very obliging, and is thanked for his courtesy. The band of the Royal Horse Guards was in attendance during the afternoon, and there was an attraction for feathered fanciers in a poultry exhibition. The principal awards in the horticultural section are appended, but the amateurs' and cottagers' classes, though interesting locally, were too numerous to be dealt with.

Groups formed a very pleasing feature in a large tent devoted to flowering and foliage plants. Two classes were provided, the first prize in the larger (12 by 10 feet) being won by Mr. Aitken, gardener to Major Meeking, Riching Park, Slough, whose arrangement, though perhaps a little overburdened with bloom, was undeniably attractive. The popular Maidenhair Fern formed a cool groundwork, from which sprung *Gloxinias* and *Crassulas*, table plants comprising *Vallota purpurea*, *Lilium speciosum*, *Celosia pyramidalis*, *Tuberoses*, *Gladioli*, and the graceful flower spikes of *Francoa ramosa*. Small-leaved *Crotons* were also used, but a little too freely for securing a perfect effect. Altogether quieter in tone was the second prize group of Mr. W. H. Austin, Chalvey, Slough, but here the other extreme had been gone to, and the cultural merit of the various plants used was much in the rear of the winning group. Mr. T. Lockie, gardener to G. O. Fitzgerald, Esq., Oakley Court, won in the class for group 6 feet by 5 feet, but this was altogether too lumpy and packed. The plants were well enough grown, the *Gloxinias* in particular being very fine, but the mass of colour, both of flower and foliage, was too heavy. A prettier group came from Mr. D. Paxton, gardener to the Hon. C. S. Irby, Hitcham Grange, Taplow, but it was a little too flat, and only second prize was awarded, while the third prize collection of Mr. W. R. Williams, gardener to J. M. Richardson, Esq., Seymour Court, Great Marlow, was arranged on very primitive lines. Great as the advance has been in this class of work, it is evident that very much remains to be learned.

Flowering and Foliage Plants were a very good display on the whole. Amongst the former *Tuberous Begonias* showed the marked improvement that has taken place in these plants of late years, and also their great value for decorative purposes. Six plants were asked for, and the first prize went to Mr. Lockie's specimens, beautiful plants which did him very great credit. They were about 2½ feet high from the edge of the pot, and the same in diameter, well clothed with clean substantial foliage from top to bottom, and admirably bloomed. The varieties were not named, possibly they own no names, but they were not the less highly attractive. Mr. A. Deadman, gardener to G. Higgins, Esq., Ray Park, was second with smaller plants, but similarly healthy and well flowered, and the varieties were good. Mr. Goodman, gardener to C. Hammersley, Esq., Abney House, Bourne End, was a close third, and judging from the character of his exhibits, as well as the others, *Begonias* would seem to be well grown in Berkshire. *Fuchsias* were correspondingly good, large vigorous plants, freely clothed with flowering growths from Mr. G. Hopkins, gardener to J. W. Burrows, Esq., The Elms, Cookham, winning somewhat easily. The useful old varieties, *Mrs. Marshall*, a good plant, but only in bud, *Rose of Castile*, *Try-me-Oh!* and *Warrior Queen* were among them. Smaller plants from Mr. Masson, gardener to Miss Goulden, The Grove, Cookham, took the second prize. They were more formally trained than Mr. Hopkins' plants, for which they were no better, but had an advantage in being a little further advanced in bloom. Mr. Paxton followed. Mr. Hopkins also won with *Coleuses*, but with *Cockscombs* Mr. Lockie and Mr. Masson could not be separated. The former had the smoothest combs, the latter the dwarfest plants, carrying splendid foliage as well as heads. Mr. Lockie, a good cultivator, won again with foliage plants, his *Dieffenbachias* (*picta* and *magnifica*) being splendid, and *Dracæna Lindenii* excellent, while plants of *Acalypha macrophylla*, with their warm foliage of various tints, showed up well. Stove and greenhouse Ferns were finely shown by Mr. Aitken. His *Gold and Silver Ferns* told splendidly; *Gymnogramma Alstoni* (gold), and *G. peruviana argyrophylla* (silver) being a beautiful pair of plants. He also won with six stove and greenhouse plants, large and well-flowered specimens, and with a single specimen plant. These huge plants do not, however, command the attention that they once did. *Zonal Pelargoniums* came from Mr. Aitken, well grown and finely flowered, but a little past their best, the varieties being *Constance*, the valuable double *F. V. Raspail*, *Royal Osborne*, the fine double white *Le Cygne*, and *Daphne*. Mr.

Hopkins was second. Mr. Lockie had the best table plants, Messrs. Aitken and Williams following. Messrs. Sutton & Sons of Reading showed a collection of their Gloxinias, the plants having been raised from seed in February; each was a sturdy little plant, bearing a pair of good flowers.

Cut flowers occupied one side of the large tent, and formed a very beautiful display. Mr. J. Walker of Thame was first with Roses, Messrs. J. R. Tranter, Henley-on-Thames, and E. F. Such, Maidenhead, following. Mr. Walker also won with both Show and Cactus Dahlias, the former comprising Colonist, Geo. Barnes, J. T. West, Purple Prince, M. Chévère, Flora Wyatt, Jas. O'Brien, Miss Cannell, Hope, Jas. Vick, Mrs. Gladstone, and John Wyatt; the latter, William Pearce, Miss Sherriff, Lady M. Marsham, Charming Bride, Mrs. Hawkins, and Empress of India. Mr. J. Davis, gardener to Maj.-General Davies, Lowood, Maidenhead, also had a very attractive stand in the Cactus class. One of Mr. Walker's best exhibits was a stand of Zonal Pelargoniums, single trusses, not in competition. His Zinnias and Asters, with which he was also first, were likewise very good, especially the former, minor prizes in these classes going to Messrs. W. Pond, W. Wheeler, Tranter, Davis, Such, Hopkins, W. H. Austin, and Paxton. In the class for twelve bunches of hardy flowers the majority of the exhibitors contravened the schedule, staging Asters, Stocks, and Zinnias, Mr. Masson being perhaps the chief offender. The Judges, however, accepted the situation, and awarded the prizes according to the merits of the stands, Mr. Masson, who had an undeniably beautiful collection of flowers, being therefore placed first, Mr. W. H. Castle second, Mr. E. F. Such and Mr. Austin equal third. Mrs. Broughton, Norfolk Road, Maidenhead, was first with a bridal bouquet. Miscellaneous cut flowers comprised stands of Pansies and Roses from Mr. Such, also a collection of herbaceous plants, for which he was highly commended; stands of their beautiful Begonias, from Messrs. Laing and Sons, Forest Hill, also highly commended; a fine collection of flowers from Mr. R. Owen of Maidenhead—including a stand of his fine single Begonias (highly commended); and a display of Carnations, Phlox Drummondii, Petunias, Hollyhocks, and other flowers from Messrs. Sutton and Sons, Reading, which were also highly commended.

Fruit was well and extensively shown. Mr. Goodman won with six dishes, including excellent clusters of Black Alicante Grapes and a good Victory of Bristol Melon; Mr. Osman, gardener to S. J. Barker, Esq., Ottershaw Park, Chertsey, being second, and Mr. Aitkin third. Mr. Paxton won with a smaller collection, and also with dishes of outdoor fruit, his Brown Ischia Figs and Moorpark Apricots being very good indeed, Mr. Goodman following here. The latter won with both Nectarines and Peaches, the former a good dish of Elruge, the latter a correspondingly excellent dish of Bellegarde, and then followed up by these successes by victories both with Melons (Hero of Lockinge) and Plums (Jefferson). Mr. Osman, a good Grape grower, was first in all the Grape classes, one being for Black Hamburgs, a second for any other black (Alicante), a third for Muscats, and a fourth for any other white (Buckland Sweetwater), a result of which he has reason to be proud. Mr. Davis won with dessert Apples, having a good dish of Irish Peach, and Mr. Aitken with kitchens.

Vegetables were well shown for the Society's prizes, Messrs. Lockie, C. J. Waite, Goodman, Aitken, J. Knight, G. Davis, G. Quelch, W. H. Castle, Paxton, J. Dawe, G. Head (Winkfield), W. Pond, J. Hanch, A. Deadman, T. Willis, G. Martin, W. Thatcher, W. R. Williams, W. Wheeler, A. Simmons, G. Hopkins, J. Burdett, and W. H. Austin all showing successfully; but perhaps the most noteworthy exhibits were in the classes for Messrs. Sutton's and Webb's special prizes. These comprised fine examples of the various specialties of the two firms. In each case six kinds were asked for. Messrs. Sutton's chief prize was won by Mr. Wilkins, gardener to Lady Theodore Guest, Hensbridge, Blandford; the second by Mr. C. J. Waite; and the third by Mr. T. Lockie, Sutton's Perfection Tomato, Satisfaction Potato, and New Intermediate Carrot being remarkably well shown. Their Tomato, it may be added, was also finely shown for the Society's prizes. Mr. Wilkins also secured Messrs. Webb's principal prize, their minor awards going to Mr. T. A. Beckett, Cole Hatch Farm, Amersham (second) Lockie and C. J. Waite, the two latter being placed equal third. Webb's Gem Carrot was very finely shown, also Rousham Park Hero Onion.

WALKLEY (SHEFFIELD) SHOW.

THE ninth annual Exhibition of the Walkley (Sheffield) Amateur Floral and Horticultural Society was held on Thursday, August 14th, at the Church Schoolroom, Walkley. The Show was opened at two o'clock by Councillor B. Gleadhill, and he was supported by Councillor J. Sutton, the Vicar (Rev. T. Smith), the President (Mr. T. B. Hague), the Secretary (Mr. M. Taylor), the members of the Committee, and others. Taking the Show altogether, it was about equal to many of those held in former years, but the unfavourable weather of the last few weeks had the effect of preventing good exhibits of Dahlias and Roses, and vegetables were not quite up to the usual standard.

Some creditable groups of plants were arranged, Mr. F. C. Barnes taking the first prize with a group of flowering and foliage stove plants. Mr. Jarvis was second, and Mr. Swindin third. Mr. H. Broomhead sent a group of double and single Fuchsias, not for competition. The first prize in those for competition was awarded to Mr. Jarvis. For foliage plants Mr. G. Walker was first, and in the class for Ferns, in which he was also first, he had two splendid examples of the Squirrel's Foot Fern (*Davallia bullata*), and *Pteris scaberula*. Amateurs growing plants like these deserve to be commended. Mr. M. Taylor had some

splendid Caladiums, for which he took first prize, including the pretty little *C. argyrites*, good for table decoration, also the best of the stronger growing varieties. Mr. T. B. Hague showed a good collection of hardy cut flowers, including Cactus Dahlias, Phloxes, Gladioli, Poppies, Carnations, and Picotees. *Campanula fragilis*, a good window flowering plant, was shown in excellent condition by Mr. Jarvis. The largest foliage plant in the Show was exhibited by Mr. Laughton. It was a handsome specimen of *Yucca aloifolia variegata*. Good Pansies were getting scarce, but the best were shown by Mr. Carlton.

In the vegetable classes, the first prizes were taken by Messrs. Jarvis, Wood, Turner, Maiston, Wilson, and Jackson. The annual show always brings to a close the mark-winning year in connection with the bi-monthly floral meetings of the society. Members have a great opportunity at the annual exhibition to make up for lost time by exhibiting largely and gaining a considerable number of extra marks. In addition to exhibits staged at the Show the gardens and greenhouses of the members who wish it are inspected and judged. The two most successful members in gaining marks of merit during the year are Messrs. Jarvis and Barnes, the former heading the list with 661, the latter being over 100 behind him. Many other members hold very respectable positions below them, which no doubt they will endeavour to maintain and improve upon another year.

NATIONAL CO-OPERATIVE FESTIVAL AND FLOWER SHOW.—AUGUST 16TH.

THE National Co-operative Flower Show and Exhibition of Industries grows yearly in magnitude. Five years ago the first fixture of the kind was held at South Kensington; on Saturday last one of the large naves at the Crystal Palace and several passages adjoining the side courts were filled with workmen's flowers and produce, and various exhibits from professional gardeners. In 1888 over 3000 entries were received; in 1889 the number was 4191, and this year it has increased to 4546. The following were the entries in the workmen's classes:—Vegetables 1777, flowers 1296, fruit 209, women's, children's and miscellaneous exhibits 201. Of Potatoes there were 321, Beans 254, Peas 120, Onions, Shallots, and Leeks 256, Garden Turnips 90, Vegetable Marrows 84, Beet 82, Lettuces 81, Carrots 77, Radishes 71, Cabbages 60, Cucumbers 60, Tomatoes 42, Parsnips 39, Celery 37, and Cauliflowers 23. The task of judging these was a by no means light one, and in many instances extra prizes had to be awarded to do justice to the exhibits.

Individually considered the vegetables were highly meritorious. Potatoes were as fine as they could possibly be, indeed many were too large, but this is not of so much importance in the case of cottagers as in that of professional gardeners. Nearly all the best varieties were represented, together with many new sorts. Spring Onions were wonderfully fine, being excellent alike in size and maturity. Such fine bulbs could only be obtained at this time by sowing under glass in January or February, treating them like bedding plants, and planting them out when the weather was favourable. Autumn Onions were perhaps as fine as have ever been seen. Shallots were also splendid. Last year there was but one section for these, and single bulbs of the large variety took all the prizes. This year there were two sections, one for clusters of the small kind exhibited as grown, and the result was much more satisfactory. Carrots were superbly shown in each of the three sections, those of the Early Horn, Intermediate, and Long Surrey types respectively. They were of large size, good colour, and very clean. Beet was admirable both in size, cleanliness, and colour. Turnips were good, but included some that were a little coarse. Peas were large in pod, but not well filled, which is somewhat general this season. In the class for "One and All" Exhibition Marrow, a variety of the Duke of Albany type, there were forty fine dishes. Beans were very fine in all the sections, as were Vegetable Marrows, but some of these were rather old. Lettuces were fine in both sections, Cos and Cabbage; and Leeks, considering the earliness of the season, were very good. Celery and Cucumbers were of about average merit, Cabbages large, fresh, and good; but Cauliflowers, with the exception of one or two dishes, were too far gone and somewhat open. Collections of herbs were very good, but there was a noticeable lack of Parsley; no doubt many cottagers consider this too common to be worth showing, but that is a mistake; it ought to be in every collection.

Cut flowers were well and largely shown; on the whole they were better than last year, but there was room for improvement in the bouquets. Fruit was the weakest portion of the Show. With the exception of Red Currants and Gooseberries it was poorly shown, Apples, Pears, and Plums being small.

The total number of classes in the schedule was upwards of 240, and with the enormous number of entries referred to above it would have been futile to attempt to take the names of the prizewinners. The character of the Exhibition has therefore been briefly sketched. It was organised by Mr. E. Owen Greening, the Managing Director. Mr. William Broomhall admirably fulfilled the duties of General Secretary.

Upwards of 34,000 persons visited the Palace—a good return for enterprise in advertising, and the best testimony of the attractiveness of the Exhibition.

[DUNMORE EAST.

THOUGH Dunmore East is situated beautifully as a seaside fashionable resort, the country around is by no means fertile, nor the residences of the gentry (where high-class gardening could be carried to perfection) at all numerous, yet year after year, as detailed in the *Journal of Horticulture*, a show is held, highly creditable to the garden

proprietors, and still more to the gardeners. Does not this fact bring to shame more favoured localities where all the facilities and means to boot exist in profusion? The Show was held on the 15th inst., Lady Day, a general holiday in this country, and vast numbers of persons were brought down from Waterford and elsewhere by the steamboats, and as there was a lively breeze the upwards of twenty miles sail down was most enjoyable. A splendid marquee was used by the Committee by "Unite," London, and placed in the beautifully situated little Park right over the bay, affording a grand panoramic view, the county Wexford being on the other side, with Hook Head, on which is the grand marine residence of the Marquis of Ely, Loftus Hall.

The Committee is happily constituted of proprietors, gardeners, and clergymen of both denominations, having for President and Vice-President the Hon. Dudley Fortescue and Lord James Wandesforde Butterworth, with the Rev. J. D. Forde, the courteous Secretary and Treasurer, assisted by Mr. Harvey. As usual the exotic Ferns, of which there were magnificent specimens several feet through, of *Adiantum gracillimum*, *A. farleyense*, *A. formosa*, and *A. trapeziforme*, with an immense *Gymnogramma*, from Somerville, the Palms from the splendid marine residence of Mrs. Malcomson, Villa Marina; the *Crotons*, *Dracænas*, and ornamental foliage plants; the fruit and vegetables—the latter section largely filled—with contributions from the rector, Rev. Mr. Gilmour; from Lady Carew, Woodstown; Sir Robert Paul, and others, were conspicuous features. The following is merely an outline summary of the prize list.

In the section for plants, in which the competition was open, the President, the Hon. Dudley Fortescue (gardener, Mr. J. A. Calthorpe) won the first prize for exotic Ferns, for plants of ornamental foliage, for *Coleus*, finely coloured, Tree Ferns, *Caladiums*, very rich in venation, and for a specimen plant, the Judges having selected an immense *Adiantum gracillimum*. Mrs. Malcomson, Villa Marina and Ballinakill (gardeners, Messrs. D. Murphy and Noonan respectively), showed well in most of the classes, coming first for Cockscombs (good), double Zonals and native Ferns, and second for exotic Ferns, ornamental foliage plants, and single Zonals.

In the cut flower department there was more competition, some of the exhibits having much merit, Lady Carew, (gardener, Mr. O'Brien) having first for double Dahlias, Asters, six *Gladioli* spikes, distinct, and hand bouquets, with second for African Marigolds; Sir Robert Paul, Ballyglan, showed well, coming first for twelve single Dahlias, twelve Asters, distinct, African Marigolds, and for single Zonals in trusses of three. One of the sights in this section was a trophy stand of about a score spikes, each distinct, of *Gladiolus gandavensis* from Lord James Butler, one of the most striking objects at the Show, very finely developed spikes too. Mr. Calthorpe won prizes for Zinnias, Pansies, and six *Gladioli* spikes, Mrs. Jacob for single Dahlias, hand bouquets, Asters, and first for Pansies.

In fruit Mr. Calthorpe showed a splendid specimen of Sutton's Triumph Melon, easily winning the first prize; and the same for Black Hamburgh and Alicante Grapes, magnificently shown. He was equally successful in white Grapes with large bunches of Muscat of Alexandria, and kitchen Apples. Mrs. Malcomson's Black Hamburgh Grapes were not quite finished; she was, however, a capital first for Barrington Peaches and Morello Cherries. Lady Carew scored first for Victoria Plums and dessert Apples, and second for Pears; Mrs. Jacob being first for Pears, and Miss Armstrong first for Gooseberries.

The entries for vegetables were more numerous, and went chiefly to Lord James Butler, Hon. Mr. Fortescue, Sir Robert Paul, Lady Carew, Mrs. Malcomson, Mrs. Jacob, and Mr. Dobbyn, all classes being well filled, as many as seven and eight entries; all good. A Committee of ladies judged the table decorations. There was also a children's class and an outdoor window gardening competition. Mrs. Goff of Glenville, near Waterford, had a magnificent, upwards of 7 lb., Melon (Sutton's Triumph), and spotted and marked *Gloxinias* not for competition; and Mrs. Alcock a fine specimen *Campanula*. Too much credit cannot be given the Rev. Mr. Forde for the perfect arrangements of the Show. General satisfaction seems to have been given by the Judges, who were Mr. Hugh Crawford, Kibronagh Gardens; Mr. Thomas O'Shea, Clonmel Asylum Gardens; and your correspondent—W. J. MURPHY, Clonmel.



FRUIT FORCING.

PEACHES AND NECTARINES.—*Planting Trees for Early Forcing.*—If houses have to be planted or old trees replaced, and fruit is wanted next season at an early period, the trees should be planted as soon in late summer or early autumn as the growth is perfected, the wood and foliage ripe, and the buds developed. The most suitable trees are those that have been grown two or three years under glass, and are well furnished with branches and bearing wood, having been lifted annually or biennially. These will lift with fibrous roots, and if of home growa with balls of soil speedily becoming established. Trees grown three or four

years trained to walls, and that have been lifted each year or every second one so as to secure sturdy well matured wood, are eligible, but trees that have been grown in the open ground are not suitable for planting with a view to having fruit next season, especially at an early period. Those trained to walls and intended to be moved to houses for starting early ought now to have the soil taken out as deeply as the roots, digging the trench around them one-third the distance from the stem that the trees extend. The trench so made should remain open for a fortnight or three weeks, when it may be filled again, care being taken not to allow the trees to want water whilst the trench is open, not giving more, however, than is necessary to prevent severe flagging. This will only be necessary for trees having a tendency to late growth, or where any doubt exists as to the maturity of the wood and buds. It will effectually check the growth and ensure its ripening, whilst it will materially assist lifting with soil and a mass of fibrous roots. The trees for early forcing should be planted at the end of September, and lifting early forced trees should commence as soon as the leaves give indications of falling. It will not matter about a few sappy laterals; their softness, if they survive, will tend to the manufacture of roots. Soil should be obtained in readiness, so that work of this kind can be performed with the utmost promptness and dispatch. Clean drainage too in different sizes should be provided. The soil may consist of any good loam, preferably strong and calcareous, the top 3 or 4 inches of a pasture overlying limestone or chalk being best, especially if interspersed with flints. Such will grow Peaches and Nectarines to perfection without any admixture. Light soils are the worst. Those that are sandy should have an addition of a fourth of clay or clayey marl, finely divided and mixed with the soil. If this cannot be had, chalk may be used to the extent of one-sixth, and the border must be made compact. Peaches will not thrive in light open soil. Very stiff soil may be improved by an addition of brick and old mortar rubbish.

CUCUMBERS.—Add fresh soil from time to time as the roots protrude from the sides of the ridges or hillocks, encouraging autumn fruiterers to make a strong but healthy growth, affording plenty of water at the roots, but not too much, with a moist genial condition of the atmosphere by syringing at closing time, and damping available surfaces occasionally. Sufficient fire heat must be employed to prevent the temperature falling below 65° at night, and to maintain it at 70° to 75° by day. Old plants should have the exhausted growths cut away and others thinned where likely to be crowded, so as to admit light and air, securing a sturdy solidified growth and a succession of bearing wood. The syringe should be regularly employed about 3 P.M., and if mildew appear dust with flowers of sulphur in the evening, maintaining a somewhat dry freely ventilated atmosphere. Black aphides are sometimes troublesome. They are best exterminated by fumigation, which must be done carefully with good tobacco paper. The operation is most efficacious when performed in the evening and repeated early the following morning. The foliage should be dry, the smoke delivered cool, and free ventilation afforded afterwards.

MELONS.—Let the latest plants be placed out at once. Train with a leading shoot until it reaches two-thirds across the trellis, then pinch out its point, rubbing off the laterals up to the trellis, and then every alternate one on opposite sides of the primary growth. Maintain a temperature of 65° to 70° at night, 70° to 75° by day, 80° to 85° from sun heat, closing early so as to increase to 90° or 95°. Do not stop the laterals unless they fail to show fruit at the second or third joint. Weakly plants should have the first show of fruit removed, stopping the laterals at the second or third joint, relying on the sub-laterals. Early ventilation with plenty of light will secure sturdy, thoroughly solidified growth. When Melons are ripening no water should be given at the roots, and air should be freely afforded. A little ventilation constantly will prevent the deposition of moisture on the fruit and insure its ripening without cracking; but in dull weather it will be necessary to have gentle warmth in the pipes to secure the requisite temperature. Plants showing fruit should also have a rather warm and dry atmosphere, ventilating freely so as to have the pollen and pistil in the right conditions for fertilisation. This should be attended to daily as the flowers become fully expanded. Stop the shoots at the time of fertilisation one joint beyond the fruit. Afford every encouragement to plants swelling their fruit, watering and affording liquid manure at the roots as necessary. Keep the laterals well in hand, and let the principal leaves have due exposure to light and air. Maintain moisture by damping available surfaces when they become dry, syringing and closing early in the afternoon.

Late plants in pits and frames are swelling the fruit freely. Earth up the roots if necessary, but late plants on manure beds do not require a large amount of soil. Generally they grow too much, which can only be prevented by a firm condition of the soil and timely attention in ventilation. Keeping the growths thin is also necessary to secure sturdy stems and firm textured foliage, the laterals not being allowed to interfere with the principal leaves. If the weather be cold or dull afford good linings and admit a little air, as nothing is so fatal to quality in Melons as a close atmosphere. Sprinkling should only be practised on fine afternoons. If black aphides attack the plants fumigate moderately on two or three consecutive evenings. Examine them frequently for canker, promptly applying quicklime to the affected parts. Gradually withhold water at the roots and moisture from the atmosphere when plants are ripening their fruits, and if a little extra heat be afforded by linings of sweet material so as to admit of a free circulation of air the quality of the fruit will be enhanced, and this will often prevent cracking.

KITCHEN GARDEN.

TOMATOES.—The season so far has not proved favourable for these in the open air, but they are as good as usual under glass, and as the open air crops will not be a great success extra attention should be devoted to those under glass. Plants that have been restricted should be allowed to make a fresh leader, and go on for some distance to form a few more clusters of fruit for late ripening. If the main stem of any is exhausted and shoots are growing from the base, encourage these by cutting the old stem down. A second crop will be quickly secured in this way. All old plants that have filled their pots, or limits, with roots should have a firm top-dressing put to them, consisting of half loam and half manure. Cut the fruit as it begins to ripen, as if it is allowed to hang on the plants long after it is ripe it will retard the swelling of the others. Do not attempt to force the plants by keeping the house close, as they will make more progress if grown with a free circulation of air.

WINTER SPINACH.—This is one of the most useful crops anyone can grow. It is capable of filling up many gaps in the kitchen, and one or more good breadths of it should be grown in all gardens. It may be sown at once, and again in September, but the present sowing may prove as good as any, and those who can only accommodate one crop should sow now. The prickly variety is usually preferred, though many gardeners find the broad-leaved variety equally hardy. Both may be tried. The crop may follow Potatoes or Peas. The seed should be sown in drills 15 inches apart and 1 inch deep. We gather from our present sowing in the early winter, and the plants grow luxuriantly again for a further supply in the spring.

THE FIRST MUSHROOM BEDS.—We can hardly expect open air Mushrooms to be plentiful this autumn, but should they be so the supply will not go far into October, and where Mushrooms are required then and during the end of the year the first beds must be formed by the end of August. It is somewhat difficult to get the most suitable materials at present, as most of the horses are on grass, but wherever a few barrow or cartloads of horse droppings can be collected a bed may be formed. There is little difficulty in preparing the manure now, as it will dry sufficiently in a few days if spread in an open shed. Turfy loam may be added a few days before the bed is formed, as it will absorb the juice of the manure and improve the bed. We make the first bed against a wall in a cool shed or outhouse, about 18 inches deep at the back and 10 inches in front. If the manure is in good order the bed may be made up, spawned and soiled on the one day. The material should be trodden as firmly down as possible, as the firmer it is the better does it retain the heat, and this not only produces an early crop, but a long continuance of good Mushrooms.

AUTUMN ONIONS.—These are not so large as usual, nor so well ripened, but many of them are now beginning to split, and these are useless for keeping. All the bulbs should be drawn and laid in the sun to dry. This will prevent their splitting, and they will ripen for storing and for use till Christmas. They are especially valuable to those who are deficient in spring sown Onions.

LATE PEAS.—When records of the Pea crop of 1890 come to be written few of them will be couched in glowing terms, as the season has been a very indifferent one for Peas, the pods taking so long to fill, and the flavour has been generally deficient. Late varieties sown at the usual time are very backward, and will require special treatment to make them pod freely in October. If they are shaded by other rows of Peas or any other tall growing crop, the sooner they are fully exposed to the sun the better, and should the weather prove dry they should be liberally supplied with guano water.

PESTS.—The Parsley we noted as having failed some weeks ago received at that time a heavy watering in which petroleum was mixed at the rate of one wineglassful to the gallon. This entirely destroyed the grub, and green leaves are now pushing freely. The Carrots subjected to the same treatment have not improved, as the grubs had buried themselves in the roots beyond the reach of the oil, but next year an experiment will be made by sprinkling the surface of the soil with the oil before it is forked over for the reception of the seed. Caterpillars which may now be appearing on Cauliflower should be picked off before they become numerous. The season has been in favour of slugs and snails all through, and care must be taken that they do not destroy the young crops of Cabbage, Lettuce, Endive, and other plants.

LEEKs.—Huge Leeks are very desirable for exhibition, but they are not particularly useful for other purposes, and unless they are wanted for showing much time need not be devoted to their culture. The large plants must, however, be carefully earthed up at the present time. They should also receive liberal quantities of strong liquid manure. The soil should not be put to them in large quantities, but only a little weekly. When it is raised so much that the plants appear to stand on ridges, the best place to feed is between them, as if the liquid manure is emptied down amongst the leaves it is apt to do injury.

LARGE SPRING ONIONS.—These are very backward this season, as plenty of sunshine is essential to their development. To aid them in swelling and ripening we find it a good plan to draw the soil away from the bulbs and leave each resting in a hollow. The sun has a most beneficial influence over them then, and when liquid manure is given it is an easy matter to fill the vacancy around each bulb.

PLANT HOUSES.

Gardenias.—Cuttings of soft-growing shoots should be inserted singly in small pots, well watered, and placed in the propagating frame

until they are rooted. When inserted thickly together they should be potted singly directly they are rooted. When well established in small pots, pinch out the leader to induce them to branch. Young plants always produce the finest flowers, and if kept growing from the time they are rooted without a check they are not difficult to keep free from insects, and by the following autumn will be fully 2 feet through.

Clerodendron Balfourianum.—Plants grown as bushes, flowered early in the year, and confined at their roots, will have thoroughly ripened their wood and rested in an intermediate temperature. If the shoots are partially pruned back and the plants placed in brisk heat they will break into fresh growth and produce a second crop of flowers. Push plants into growth that have only just flowered, and fully expose them to the sun. Wood made in a moist shady atmosphere is difficult to ripen thoroughly in autumn. Feed with weak stimulants plants that are lengthening out their growths.

Tydas.—Evergreen varieties such as Madame Heine should be placed in 5-inch pots and grown in an intermediate temperature. Admit air freely when the weather is favourable, and close the frame early in the afternoon. Shade the plants from bright sunshine, but be careful not to allow water to fall on their foliage, or it will be browned and disfigured. The same care is necessary with those that make tubers. These kinds will be growing rapidly, and may need a few light stakes to support them. The frames in which they are grown will need fire heat if the weather continues cold. Nothing is gained by starving them. They must be kept growing after they are started, or they will not attain their full size and give satisfaction.

Gloxinias.—Place seedlings in their flowering pots, 4 or 5-inch, according to their size. Allow the young plants to come forward gradually, and in due time they will push up fine flowers. These plants do well in loam with one-third leaf mould and one-seventh manure and sand. Shade from the sun, and water carefully until they are rooting freely.

Gesneras.—Place these in from 5 to 7-inch pots according to the variety and the number of plants in each pot. To grow these well they must have a warm moist atmosphere where they can be shaded from the sun. No water must be allowed to fall upon their beautifully marked foliage. If possible stand them on a bed of moisture-holding material. Give water carefully at first, but do not allow them to become dry. They will do well in the soil advised for Gloxinias, but add more sand.

Justicia flavicomma.—This plant is useful for any position, but stands longer when in bloom in the conservatory and intermediate temperatures than in the stove. Feed all the earliest plants with weak stimulants, shade from the brightest sun only, and keep the plants moderately close in cold frames. Those in a more backward condition should be pushed forward for a time in brisk heat. Cuttings that were rooted late will only need 4-inch pots, and should be grown without pinching.

Plumbago rosea.—The shoots of these should be allowed to extend. Do not hurry them, or they will soon run up tall and fail to flower as profusely as those that are grown under cooler and more airy conditions. Watch for thrips, which is very liable to trouble these plants, and is best destroyed by dipping in or syringing with a weak solution of tobacco water.

Pandanus Veitchi.—Suckers from plants that are throwing them up freely near the base may be carefully taken off and inserted in small pots. They will root quickly in sandy soil if placed under handlights and kept close. When well rooted they should be placed into larger pots, and if grown in a close moist atmosphere, and fully exposed to the sun, they will grow rapidly and be well coloured. It is only when grown in the shade that this useful decorative plant fails to colour and turns green.

THE BEE-KEEPER.

FOUL BROOD.

It is to be regretted that this disease is spreading widely in a most virulent form, and at a time which makes it most difficult to combat owing to the scarcity of honey. These two evils combined are almost enough to induce many to relinquish bee-keeping as unprofitable and annoying. One of the most extensive apiaries in Scotland has been attacked with the most virulent form of foul brood, and a number of others are victims also. The owners have traced its introduction to imported queens. At all events the disease in every instance has had its rise in hives that were perfectly healthy previous to their introduction. It is a pity there is not some means of preventing queens being sent from infected stocks. If that were so it would be better for all concerned, and bee-keeping would be less of a lottery and more remunerative than it is at present.

CAN THE DISEASE BE CURED?

This is an oft-repeated query, to which we answer, "No; not to pay." The "purgatorial process," as given first in this

Journal, and which the Americans recommend, is the surest way of banishing the disease. So long as a piece of infected comb remains in the hive assuredly will the disease break out anew the moment the hive is in a favourable condition for its propagation.

IMPORTED WITH QUEENS.

If queens are raised in diseased hives, then in all likelihood they will transmit the disease. Or if drones are in an infected hive they may transmit the disease to the queen and progeny. I never experienced a case of foul brood that I could trace to the introduction of imported queens; but my method of treating them may have helped to this immunity. I usually open the cages containing queens and air the bees and queen well, transferring them to a clean cage and feed with honey from the hive ready to receive them, this being a kind of purgatorial process similar to the original one. I have in a previous article stated that I do not believe a queen could continue laying eggs for any length of time with the disease in her system, but from the destructive nature of the germs she would fall a victim to the malady. I believe it possible, if not probable, that queens may contract the disease or something that will produce it from being confined while in transit to this country, and thus be the means of introducing foul brood, although sent from an apiary entirely free from it. Poultry and other animals become diseased, even in cases where ventilation was considered perfect. I am cognisant of cases of rabbits and ferrets becoming diseased while in transit by rail of less than fifty miles, then why not bees?

A LIKELY CAUSE OF INFECTION.

Foul brood is very contagious, so that great care is necessary to keep the healthy and unhealthy, or anything that has been in contact with the latter, separate and out of the reach of the former. Perhaps the most dangerous agents for spreading the disease are robber bees, and the present year being favourable for them, they may have been the direct cause of the prevalence of so much disease in apiaries. To those unacquainted with the habits of bees the presence of robbers may not be detected until the mischief is done. Practical bee-keepers are always on the watch, and seldom fail to detect a robber however cunning she may be. They sometimes continue their depredations for a long time without bringing many of their sisters to the spoil. These Corsair bees are mostly the aged ones, and carry the disease to and fro, because foul-broody hives are liable to be invaded, so that from one infected hive many may, by the above means, become infected within a few weeks. It is hoped that all those who may have infected hives will take prompt measures to stamp out the disease, and make no attempt to cure the hives in any other way. It is a duty they owe not only to themselves but to their fellow bee-keepers and the country.

It has been asserted by different authorities that the disease is curable, and has been cured by different antiseptics employed but whenever these were tried by uninterested persons they always failed. From the very unindestructible nature of the germs this is not difficult to account for. They resist a greater heat than that of boiling water, and a greater degree of cold than that of zero.

In most cases the disease has run its course before it is detected, and the very opening up of the hive may spread it to a great extent. The clothing and hands of the operator may get infected, then apiaries are at his mercy. Hives may be carried within doors and the combs sprayed with acids or other antiseptics, but anything strong enough to destroy the germs, or rather alter the nature of the combs and their contents, so as to become unfavourable as a nidus for the germs, would injure, if not destroy the bees. Besides, it takes all the year for a hive to be in a state for profit, and young swarms improve much quicker than old and diseased stocks will do.

While I am writing two letters have come to hand asking if the disease could be imported with foundation made from wax from diseased stocks. I am unable to say positively whether it

could or not, but I should not be surprised if hives became diseased through infected foundation. As prevention is better than cure avoid crowding bees into little space or spreading brood, as I believe overheating to be the prime cause of foul brood, and the opposite may have the same effect. I am in favour of using carbolic acid and things of the same nature freely about the hive, but if I discovered foul brood I would make no attempt to cure or experiment with it further than removing the hive with bees within doors, transferring the latter into a straw hive for two or three days, then transfer again for the same time, after which I would put them into their permanent hive and watch results.

To have an entire immunity from foul brood amongst the hives requires far greater care than many are apt to think necessary or give to their hives. We regret to learn that the plague is so virulent and widely spread that slabs of comb sent us contained scarcely a single living nymph. We hope no pains will be spared to get rid of the disease, so that 1891 may be a cheerful and profitable year.—A LANARKSHIRE BEE-KEEPER.

CARBOLIC ACID.

WILL "A Lanarkshire Bee-keeper" be so good as to explain how to proceed with carbolic acid, as he said some time ago that he uses it in a crude state to drive bees from supers, also where I can procure carbolised paper? I wish to thank the "Lanarkshire Bee-keeper" for his sound advice, which I have read in the Journal, and acted upon with the greatest success for over eleven years.—G. C.

[Carbolic acid is used in the apiary to prevent robber bees attacking a hive when manipulating. The bee-keeper in this case must keep a watch, and whenever a robber alights a feather dipped in the acid applied to the bee or the place it alights on will prevent it filling itself with honey and attracting others, until the operator gets the hive closed. A little acid smeared upon the tops of the bars is cleaner and more effective than smoke as a subjugator, and when judiciously used acts as a preventive against foul brood and moths. It is unsurpassed for clearing bees from frames or supers, and is best used upon paper, as it drives the bees from any frame the bee-keeper desires, leaving the rest of the hive unmolested. There are other uses for it which I will pass over for the present, but may explain at some other time.

I use medium brown paper, and preserve the sheets. Those I have in use are at least twenty years old, and are kept straight in book-form between two boards. This is necessary, so that they pass easily between the combs. When the paper is too thin it buckles, and when too thick is apt to cut the combs when they are closely built. I use a feather to smear the acid upon the paper—a very little does—and mostly near the bottom edge of the paper, which should have a second bend, or two pins near the top to prevent it slipping down when the hive and supers are deep.

I prefer crude acid, which may be had of any chemist or apothecary.—A LANARKSHIRE BEE-KEEPER.]

CANDY AND THE BENTON CAGE.

IN the issue for July 24th "A Lanarkshire Bee-keeper" refers to candy in connection with myself, and says he used similar mailing cages to the "Benton" long before Mr. Benton. I suppose his similar cages consisted in boring holes in a block of wood by means of a centrebit. I am not aware that Mr. Benton claims to be the first to hollow out cages in that way, nor do I consider that anyone can claim to father the idea, as the centrebit is old, Holman Hunt having pictured it in the tool rack in his picture of the "Shadow of Death" as being a carpenter's tool in the time of our Saviour, though, without a doubt, the model he used was made in Sheffield.

The first "Benton" cage was sent to me in the autumn of 1883. It had four round holes in it; at one end was a bottle of water, at the other a bottle of candy, next to it a hole without any air holes, and next to this a hole that was well ventilated. This was Benton's invention, the Benton cage consisting of two chambers for the bees, one ventilated, and the other not. The two side grooves were borrowed from my cage, in which he had been mailing queens to America.

In 1883, as the readers of the "B. B. J." for that date remember, I had had a good deal to say about candy as food for bees, having made the discovery that bees could eat and live on candy or dry sugar alone, provided the grains were small enough. At that time everyone thought that water in some form was necessary,

and I got well laughed at for my assertion. Mr. Benton and myself had been working for a long time jointly trying to solve the mailing problem, and we discussed the so-called "good candy" invented by Mr. Scholz, consisting of granulated sugar and honey mixed, the idea being that the honey stuck to the sugar from which the bees licked it. Mr. Root used very fine sugar so as to have more surface for the honey to adhere to, but the bees never ate any of the sugar, and provision had to be arranged for the sugar to get out of the cage on a long journey. I urged on Mr. Benton to make up a food of my candy crushed and then stuck together again by means of honey, when, I told him, the bees would eat all before them. He did not believe they would do so, but still he thought that sugar ground as fine as flour would give more "surface." He tried it and found the bees ate both sugar and honey. This caused quite a sensation when a queen with a score of worker bees were sent in a dry pine box on a twenty-five-days journey without water.

I do not claim, and never did claim, to have been the first to feed bees on candy, but what I do claim is the discovery that bees can eat and live on dry sugar alone, "provided," as I have stated above, "the grains are small enough." Most people think that baked lump sugar is really dry, and therefore an utter absurdity to suppose that animal life can be sustained by it without water, while, as a matter of fact, such sugar is 50 per cent. water, and only 1 per cent. more water will make very soft—too soft for mailing purposes; therefore the matter is not so absurd as it seems. Mr. Benton used a three-hole cage in 1880 very similar to the one he uses now, with a bottle of water at one end, the bees in the centre one, and the other filled with candy, but the two are totally distinct.—A HALLAMSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

Dicksons (Limited), Chester.—*Catalogue of Dutch and other Bulbous Flower Roots.*

Sutton & Sons, Reading.—*Highly Illustrated Bulb Catalogue.*

Van Meerbeek & Co., Hillegom, Holland.—*Catalogue of Dutch Bulbs.*

Geo. Bunyard & Co., The Old Nurseries, Maidstone.—*Catalogue of Strawberries and Summer Fruits.*

G. E. Elliott, Huddersfield.—*Catalogue of Flower Roots, Roses, &c.*

E. P. Dixon & Sons, Hull.—*Catalogue of Bulbous and other Flower Roots.*

J. R. Pearson & Sons, Chilwell, Notts.—*Catalogue of Dutch Bulbs and other Flowering Roots.*

Wm. Clibran & Son, 10 and 12, Market Street, Manchester, and Oldfield Nurseries, Altrincham.—*Autumn Bulb Catalogue.*

John Watkins, Pomona Farm, Hereford.—*Descriptive List of Strawberries.*

J. H. Krelage, 17 to 27, Kleinen, Houtweg, Haarlem, Holland.—*Catalogue of Dutch Flower Roots.*

Richard Gilbert, High Park Gardens, Stamford.—*Catalogue of Strawberries.*

Grapes Discoloured (W. J.).—The discoloration of the fruit has been caused by the temperature of the house having fallen too low at night on one or two occasions, and the consequent coldness of the berries has been followed by a deposition of moisture on them from the atmosphere in the form of dew. Then the house having become too hot on some morning before air was admitted, the ventilators were opened too widely at once, and the sudden evaporation from the fruit injured the cuticle. The berries have had a narrow escape of being scalded and spoiled.

Sudden Death of Gooseberry Trees (G. C., Morpeth).—We cannot possibly account for the sudden collapse of the young trees, but publish your remarks in case any of our readers can offer a solution of the problem. They are well rooted, presumably, from cuttings inserted last autumn. You say—"I could see nothing wrong with them on Saturday, and this morning (Monday) there are a number of them all withered, and the bark at the roots is quite rotten." Sunday, it appears, therefore was the fatal day, and we suspect the cause of the misfortune must be sought for locally.

Melons Splitting at the Stem (R. H.).—When the fruit commences ripening there is almost invariably a separation of the cuticle at the base of the stalk, and if the fruit remains too long uncut, and there is much moisture in the atmosphere, decay ensues. Also if the plants are grown in too rich soil, and the night temperature falls too low, the atmosphere being at the same time moist, the fruit will often split and decay instead of ripening. You should have described the conditions under which the plants are grown, the temperature maintained, and the system of ventilation adopted. You can still do so if you desire further information.

Fruit Values (Idem).—We have not the slightest objection to your writing on the subject, and asking for some closer approximation to actual prices of Peaches, though you admit that the quotations referred to are in "close accord with those of other authorities." No doubt that is so, because they are obtained on the spot by persons who have been accustomed to estimate the value of fruit for many years, and who do not seize on special samples and from these publish inflated prices. The market returns of live stock are not founded on extraordinary prices obtained for extraordinary animals, or they would be misleading, but fair representative values are given, and it is the same with fruit. No doubt the prices with which you have been furnished would be given for fruit that had won high honours at an important exhibition; and if your fruit is of that high value it will realise the amount named, not otherwise, as you will find if you send a consignment. The prices you quote are very much further from "an approximation to actual prices" than those which are published by disinterested authorities. Of this we have no doubt whatever. The fruiterer who has given you his prices can only deal in the highest class fruit, and this only forms an infinitesimal proportion of the bulk sent to market.

Tecoma radicans (G. R. A.).—It is difficult to ascertain when this beautiful deciduous climber was introduced to this country from North America, its native place of growth. It was evidently cultivated in this country by Parkinson in 1640, as he has described it minutely, adding, "This never bore flower with mee, nor any other that hath it in our country that I could heare of." From that we may infer it could not have been long and generally cultivated, as the plant blooms freely enough when a few years old and the wood is well ripened. It used to be called *Bignonia radicans*, but was transferred to *Tecoma*, the difference in the genera consisting chiefly in the partition of the fruit. Plants are raised from cuttings and layers in the autumn, and grow luxuriantly in rich soil, but firm growth in firm soil containing chalk is promotive of flowering. It would flower with you in a hot sunny position, such as trained to a south wall, and the growths thinly disposed and matured. It is popularly known as the Ash-leaved Trumpet Flower.

Summer Pruning Pear Trees (B., Cork).—Provided three good leaves are left on the cut-back shoots, and the trees are not very luxuriant in growth, the whole of the buds will not push, but the top one will, and perhaps the second. They have been cut back too closely, and it would have been better to have left five or six joints, then cutting them back to three in September. Your gardener should read the *Journal of Horticulture* attentively, and if he is in doubt how to proceed in any matter, to write for information before going too far. If the Pear trees are young and robust it might be advisable to drive down a spade and cut some of the roots at a third part distant from the stem that the trees are in height; but if they only make moderate growth, we do not think you need be under any apprehension of the base buds starting into growth this year.

Lily of the Valley (C. B. C.).—You could scarcely expect many flowers this year from a bed planted last season with growing, not flowering, crowns, and especially as the soil is, as you say, very "tough." When the plants are established they grow and flower well in strong soil, but do not establish themselves quickly in such soil. No doubt the bed would have been improved if a quantity of wood ashes and decayed vegetable matter, also soot, had been incorporated in the soil; still if the plants have made strong leaves and crowns this year they will probably flower next season. If a little of the strong soil can be forked away without injuring the crowns or materially disturbing the roots, and a mixture of the kind suggested spread on the beds 2 or 3 inches thick and allowed to decay, the effect will almost certainly be beneficial. You say you "filled" the bed with plants. Perhaps they are too crowded, in which case bold crowns and fine spikes will be comparatively



✱✱ All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Begonia Carrieri (J. F. S.).—It is not uncommon for seedlings of this floriferous *Begonia* to produce rosy-tinted flowers. The flower you enclosed in the letter was, as might be expected, spoiled in the post.

Show Prizes (E. W.).—You requested us to insert the date of your Show, and we inserted it. We said nothing about either open or local classes, and the matter you send and describe as a "correction" is really an addition, and undoubtedly an advertisement. The charge for its insertion can be furnished by the publisher if you wish the announcement to appear.

few in number. If you like to state the distance from each other the crowns were planted, we shall be glad, if you wish, to refer to the subject again.

Mushrooms in Frames (E. G. B.).—You state the depth of the frames, but not the depth of the beds in them. If, however, they are over a foot thick, firm, and made of good material in a properly moist state they ought to grow good crops of Mushrooms. In bright weather they will be too hot, and the sashes should be covered with two or three thicknesses of mats, or with 6 inches of hay or straw. In this case the covering on the beds need only be an inch or two thick, and kept damp, though not very wet, for preventing the evaporation of moisture. Plunge a thermometer 2 or 3 inches deep in the bed, and so long as it registers over 100° prop up the sashes at the back. When the temperature falls below 90° insert the spawn, and a day or two afterwards, provided the heat does not rise, spread on some good soil moist enough for compression, and beat it down to an inch in thickness if heavy, nearer 2 inches if of a sandy nature; but Mushrooms do not like poor light soil, and the escape of moisture from the soil must be prevented by damp litter coverings. Your question respecting moss litter does not permit of a categorical reply. The best manure from horse stables cannot be excelled, but the moss litter after use in stables, not too wet, also with a sixth part of loam added, is better than inferior stable manure, which contains much straw. Some persons succeed in growing excellent crops of Mushrooms with the moss bedding, others fail. It is a question of judgment in its preparation for the purpose in question. It is never a "trouble" to us to answer questions when we can answer them usefully, and we trust this reply will be serviceable to you and other readers at this the proper time for making Mushroom beds for bearing in the autumn and early winter.

Writing Well (Disappointed).—You say you "want to write well but cannot," and wish for helpful hints. We suspect that the main cause of your disappointment is due to lethargy or natural despondency. You do not do the best you can often enough—or, in other words, you do not persevere. Persons who take up the pen intermittently, dash off a letter to the press, and find "a good deal of it not printed," then complain, never become good writers, because they have not clear perceptions of literary merit. What you call a "good deal" taken out, editors, you may depend, call by another name—"bad" deal. It is their duty and interest to retain what is good and eliminate what for various reasons they deem unsuitable. Ill-formed expressions, covert allusions, inflated language on the one hand, or the use of "slang" terms on the other, are either modified or rejected. A man such as yourself, who is able to write a short letter correctly and well can, if he tries, write a longer; but the longer it is the greater the necessity for care in avoiding the repetition of terms; also of guarding against the habit that seems so easy to acquire of expressing the same idea over and over again in different words. Writing is not so much a "gift" as an acquired art. It is true that some persons have a greater aptitude for it than have others, but all the same those who have become the most accomplished have striven the hardest to excel. No labour has been too great to be feared, and some of the most eminent of authors have written chapters several times over before they were satisfied with their work. Here is what one of them confessed not long ago:—"I was a thorough bad lot at school—bright, I think, and quick, but with no perseverance whatever; no patience, no application. And certainly now I have all those qualities in an extraordinary degree. I don't know what changed me. I had an immense ambition to be a writer; and when my father died in '77, leaving nothing—well, it was that or something less palatable. After that I went in for writing, to the exclusion of everything else. I was not well educated, but had always been, from a little child, a voracious reader, and determined to get on. After I had been writing awhile I awoke to the folly of letting myself drift into a first-person, present-tense style, which I thoroughly despised, and a lecture of Mr. Ruskin's to art students put me on the right track. After that, how I worked! I have many a time written a story eight or nine times over before I satisfied myself with it. I used to take a novel of W. Collins and pick the sentences to pieces, note the crisp, concise style of them, and get them into my head, so to speak. Then I would go at my own work, never using a long word when I could find a short one to answer the same purpose; never using a Latin word when I could find a Saxon to express the same meaning; never using two adjectives where one would do, or one at all when it could be avoided; never using a French word unless it was impossible to find the Saxon meaning in English, and never quoting bits of poetry unless really necessary." From the experience thus embodied you may derive encouragement; and if you are equal in discrimination and perseverance with the authoress in question and proceed on the lines indicated, you may hope for a fair measure of success. It may not, and probably will not, very closely approach that attained by this "bad lot at school" and "not educated" girl, because she now earns at the least £1800 a year by her pen. If you earn half that, after long striving, you will, perhaps, no longer be what you now describe yourself—"disappointed."

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens should be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp.

(W. E. B.).—*Rosa microphylla rubra*, a variety of *microphylla*, which species is a native of the Himalayas and of China. The shrub is *Rhus cotinus*, and is commonly known as the Smoke Tree, from its peculiar floral appendages.

COVENT GARDEN MARKET.—AUGUST 20TH.

MARKET dull, with good supplies of indoor fruit; outdoor fruit coming short.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, $\frac{1}{2}$ sieve	3	6	to	6	0	Grapes, per lb.	0	9	to 3 0
" Nova Scotia and						Lemons, caso	10	0	15 0
" Canada, per barrel	0	0		0	0	Melons, each	1	0	2 0
" Tasmanian, p. case	0	0		0	0	Oranges, per 100	4	0	9 0
Cherries, per $\frac{1}{2}$ sieve ..	0	0		0	0	Peaches, dozen	1	0	8 0
Currants, Black $\frac{1}{2}$ sieve	7	0		8	6	St. Michael Pines, each..	2	0	6 0
" Red, $\frac{1}{2}$ sieve ..	4	6		0	0	Strawberries, per lb. ..	0	2	0 6

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.	
Artichokes, dozen	0	0	to	0	Mushrooms, punnet	1	6	to	2	0
Asparagus, bundle	0	0		0	Mustard & Cress, punnet	0	2		0	0
Beans, Kidney, per lb. ..	0	3		0	Onions, bnshel.	3	0		4	0
Beet, Red, dozen	1	0		0	Parsley, dozen bunches	2	0		3	0
Brussels Sprouts, $\frac{1}{2}$ sieve	0	0		0	Parsnips, dozen	1	0		0	0
Cabbage, dozen	1	6		0	Potatoes, per cwt.	3	0		4	0
Carrots, bunch	0	4		0	" New, per lb.	0	0		0	0
Canliflowers, dozen. . .	2	0		4	Rhubarb, bundle	0	2		0	9
Celery, bundle	1	0		1	Salsafy, bundle	1	0		1	6
Coleworts, doz. bunches	2	0		4	Scorzonera, bundle	1	6		0	0
Cucnmbers, doz.	2	0		3	Seakale, per bkt.	0	0		0	0
Endive, dozen	1	0		0	Shallots, per lb.	0	3		0	0
Herbs, bunch	0	2		0	Spinach, bushel	1	0		2	0
Leeks, bnsh	0	2		0	Tomatoes, per lb.	0	3		0	6
Lettuce, dozen	0	9		1	Turnips, bunch	0	4		0	0

CUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	2	0	to	4	0	Maidenhair Fern, dozen			
Asters, per bunch, French	0	9		1	0	bnches	4	0	to 9 0
„ English, 12 bnchs.	3	0		6	0	Mignonette, 12 bnches..	1	0	3 0
Bouvardias, bunch ..	0	6		1	0	„ Fr., large bnch	0	0	0 0
Carnations, 12 bunches ..	4	0		6	0	Pansies, dozen bunches ..	1	0	2 0
„ 12 blooms ..	1	0		2	0	Pelargoniums, 12 trnses	0	9	1 0
Calceolaria, doz. bunches	4	0		6	0	„ scarlet, 12 bnchs	3	0	6 0
Cornflower, doz. bunches	1	6		3	0	Pinks (various), doz. bchs.	3	0	6 0
Dahlias, dozen bunches..	2	0		4	0	Primula (double) 12 sprays	0	6	1 0
Eschscholtzia, 12 bunches	2	0		4	0	Ranunculus, doz. bnches	0	0	0 0
Eucharis, dozen	3	0		4	0	Roses (indoor), dozen ..	0	6	1 6
Forget-me-not, doz. bnch.	1	6		4	0	„ Moss (Eng.), 12 bch.	0	0	0 0
Gardenias, 12 blooms ..	2	0		4	0	„ Red (Eng.), 12 bch.	2	0	8 0
Iris, various, dozen bnchs.	0	0		0	0	„ Red, 12 blooms ..	1	0	2 0
Lapageria, 12 blooms ..	2	0		4	0	„ Tea, white, dozen..	0	6	2 0
Gladolus, 12 bunches ..	4	0		9	0	„ Yellow	2	0	4 0
Gypsophila, per bunch, Fr.	1	0		1	6	Stocks, dozen bunches ..	3	0	6 0
Lilium, various, 12 blms.	0	6		1	0	Sweet Peas, 12 bunches	1	6	3 0
„ longiflorum, 12 blms.	2	0		4	0	Tnberoses, 12 blooms ..	0	3	0 0
Marguerites, 12 bunches	2	0		6	0				

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.		
Aralia Sieboldi, dozen ..	6	0	to	12	0	Geraniums Scarlet, p. doz.	3	0	to	6	0
Arbor Vitæ (golden) doz.	6	0			8	Heliotrope, per doz. ..	4	0		6	0
Asters, dozen pots ..	3	0			6	Hydrangea, doz. pots ..	9	0		18	0
Calceolaria, per doz. ..	4	0			6	Lilium lancifolium, doz.	9	0		18	0
Climbing Plants, various,						" longiflorum, doz.	12	0		24	0
dozen pots	4	0			9	Lily of the Valley, 12 pots	0	0		0	0
Crassula, per dozen ..	9	0			12	Lobelia, per doz.	3	0		4	0
Cyclamen, per dozen ..	0	0			0	Marguerite Daisy, dozen	6	0		12	0
Deutzia, 12 pots	0	0			0	Mignonette, per dozen ..	4	0		6	0
Dracæna terminalis, doz.	24	0			42	Musk, per dozen	2	0		4	0
" viridis, dozen	12	0			24	Myrtles, dozen	6	0		12	0
Epiphyllum, per dozen ..	0	0			0	Nasturtiums, dozen pots	3	0		4	0
Erica, Cavendishi, per pt.	0	0			0	Palms, in var., each ..	2	6		21	0
" various, dozen	12	0			18	Pelargoniums, per doz. ..	6	0		12	0
Euonymus, var., dozen ..	6	0			18	Rhodanthe, per dozen ..	4	0		8	0
Evergreens, in var., dozen	6	0			24	Saxifraga pyramidalis,					
Ferns, in variety, dozen ..	4	0			18	per dozen	0	0		0	0
Ficus elastica, each ..	1	6			7	Spiræa, 12 pots	0	0		0	0
Foliage plants, var., each	2	0			10	Stocks, per doz.	0	0		0	0
Fuchsia, per doz.	4	0			9	Tropæolums, various, per					
Geraniums, Ivy, per doz.	3	0			6	dozen	3	0		6	0



HARVEST TIME.

BUSY harvest time is again upon us, and we began reaping corn under a sunny sky with the barometer steady and tolerably high, but it had not reached "Set Fair," nor has it done so once this summer. The faint promise of more settled weather has not held good. Twice has the mercury fallen below "Change," and we are writing this article during an exceptionally severe thunderstorm, accompanied by such a heavy downpour of rain as will make

its way into every badly built corn shock and every loose sheaf. On the whole the crops are good, and with us decidedly above the average. Barleys are a big crop, so are Oats; Winter Beans are excellent, and with Wheat up to £2 a quarter we long for fine weather to impart quality to both Wheat and Barley, and enable us to realise the fair promise of an abundant yield and profitable prices which seemed so possible only a week ago. Ah! there is a gleam of sunshine; the storm is o'er, the clouds are passing away, and all may yet be well. Let us take the broken weather as an incentive to exertion, and strive to the utmost to save the harvest.

As a means to so desirable an end we have endeavoured so to arrange the work and the rate of pay that the workmen can have no just cause of complaint, and no question can arise to cause friction or any dispute during harvest. All the corn upon every farm has been put in the harvest. Each man has to reap a given number of acres. The men select the lord of the harvest, who for the time being is foreman and leader. The price paid per acre is inclusive of binding and stacking, and if a self-binder is used due allowance is made for it. But we assist the men with all the extra help we can command, as that is a matter clearly in our own interest. The rate of weekly advance out of the gross amount to be paid for the work is £1 per man; a shilling each is given to "bind the bargain" when the terms are decided, and 2s. 6d. each is also given at the final settlement when the balance due to each man is paid him.

The Truck (Amendment) Act of 1887 renders payment by beer or other intoxicating drink illegal, and it is only when labourers board in the house that there should be any question about drink of any kind. We have long discontinued any allowance of beer or cider, simply because it was a nuisance, and once there was a clear understanding that all payments were to be made in money the nuisance ceased. Kindly feeling between master and man is highly desirable, and we have not found pandering to the common greed for drink tend to promote it. Rather, much rather, was it a source of ill-feeling, and the cause of many a growl, for the conception of what is enough in the way of drink allowance by the ordinary labourer is a remarkably near approach to the verge of intoxication.

On every large farm in hand it has been our custom to supply a reaping machine, with a change of horses every two hours, and this is taken into account when the price per acre is settled with the men. A self-delivery reaper with its rakes is a real labour-saving appliance, and a fair calculation as to the extent of its use can be made beforehand. But the self-binder is much more of a speculative affair. Given a full crop of clean, upstanding growth, when the corn is well out of the milky stage, a self-binder before all things say we, if only we could be certain that the corn would not be beaten down! But that is precisely our difficulty, and it never was greater than in the present summer of unsettled weather. The only thing we can do is to base our calculations upon the condition of the corn, and to have an explicit understanding with the men that if the self-binder can be used it must be used, and then there must be a proportionate reduction in pay. It would be ridiculous to suppose the men would regard such an implement with favour, and the master, while bound to enforce its use, will do well to consider the men so far as is possible.

We are often told that a day labourer is so badly paid that if it were not for the extra pay of hay and corn harvest he could not get on at all. We agree so far as the day pay question goes, but then we altogether object to day pay if it can be avoided, and it can in a much greater degree than obtains recognition on most farms. Piecework involves a little more care in the supervision, and a certain amount of preliminary calculation, but it is unquestionably more satisfactory from whatever point of view we regard it. Far better it is to retain the services of a few really good skilful workmen who have the healthful incentive of piecework to exertion, than to have a greater number of underpaid day labourers, who, having no such incentive, do as little as possible, complain bitterly

of their lot, and naturally feel that they are oppressed and down-trodden by a master, who pays as little as he can, and gives them so few opportunities earning extra pay.

WORK ON THE HOME FARM.

If the cattle Cabbage has not been sown no time should be lost in getting in the seed. Transplantation from a seed bed will probably be an early and expeditious thing this damp season. But if land can be had preference should always be given to drilling the seed for the greater certainty of obtaining a plant, and for economy of labour. It is quite possible that we may have some dry hot weather yet, and then the advantage of drilling will be sufficient to well reward us for our diligence in an early preparation of land for the drilling.

This is decidedly a light land farmers' season, and they should have no difficulty about drilling Cabbages and stubble Turnips. Trifolium incarnatum of both early and late varieties should be drilled upon the first clean stubbles available, wherever this crop answers, as it is a most valuable early spring fodder, of immense bulk and most nutritious.

General complaints are again prevalent of much spoiled Clover hay, as was to be expected in so wet a summer. One manager of a certain home farm declares that he has hardly any good hay. Has he ever heard of ensilage? He must have done so, and might have turned most of his first cut of Clover to good account by means of it. Professor Wrightson says, in the *Agricultural Gazette*, "That he has a fair heap of some 300 tons of meadow grass made into silage, which is weighted with a substantial hayrick on the top. The heat a few inches beyond the surface is about 140°, and the smell, as tested by borers, is like rich plum cake hot from the oven."

Most disheartening has been much of the work done among root crops. Repeatedly have hoed weeds struck root again, and now that harvest work is in full swing there is no time to take advantage of fine weather for more hoeing. Upon clay farms not only are the roots foul with weeds, but the crop has a stunted, meagre appearance that is very unsatisfactory. Here again the advantage is with the light land men, for whom the outlook is very satisfactory.

Of the harvest we can only say that upon many farms Barley will be reaped before Wheat this year. The crop of the year on heavy land farms is the winter Beans, which are excellent.

THE HARVEST.—An estimate of the harvest is given by *The Mark Lane Express*, which publishes a summary of replies it has received from more than four hundred correspondents scattered over the United Kingdom, who were invited to send in returns as to the various crops in their districts. These returns "show that Wheat is 3.1 per cent. under an average, Barley 0.8 per cent. over an average, Oats 2.7 per cent. over an average, Potatoes 0.1 per cent. over an average, Beans 2.5 per cent. over, Peas 1.8 per cent. under, roots 3.6 per cent. under, and hay 18.9 per cent. under. In the case of two of these crops, however, the figures do not tell the whole story. In the case of Potatoes the great bulk of the correspondents speak of them as diseased—a larger number, in fact, than has been the case in any year since these returns were started. In the case of hay, also, although the figures show the crop to have been about four-fifths of an average one, it is very evident that much of this is damaged. More than half of the entire number of correspondents refer to this fact. With these facts in mind, however, it is still evident that, although the year is not fulfilling its high promise, the crops all round are fairly within what may be called 'the average zone'—i.e., if there is no wonderful abundance, there is, on the other hand, no story of great disaster."

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain
1890. August.	Barome- ter at 32° and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min.	In sun.	On grass		
								deg.	deg.	deg.		deg.	In.
Snnday	10	Inches.	deg.	deg.		deg.	deg.	deg.	deg.		
Monday	11	29.767	64.6	63.3	E.	62.4	74.2	58.3	113.8	55.1	0.242
Tuesday	12	29.694	63.2	61.0	S.W.	62.2	73.7	59.1	122.7	58.2	—
Wednesday ...	13	29.808	65.2	62.0	S.W.	62.4	69.2	60.8	113.2	59.1	—
Wednesday ...	13	29.780	59.4	53.1	N.W.	61.8	69.2	52.9	120.0	49.9	—
Thursday	14	29.797	61.3	55.9	S.	61.8	68.2	52.4	111.2	49.7	0.059
Friday	15	29.609	62.6	60.6	S.	61.5	72.0	55.5	121.1	54.8	0.028
Saturday	16	29.745	59.2	56.9	S.	61.6	71.7	55.2	120.1	51.3	—
		29.743	62.2	59.1		62.0	71.2	56.3	117.4	54.0	0.329

REMARKS.

- 10th.—Wet all the morning, then fair and bright; sun in late afternoon; wet again in the evening and night.
 11th.—Wet till 9.30 A.M., then fine with occasional sun; thunder heard in the distance in the afternoon; slight shower, but no measurable quantity; dull night.
 12th.—Heavy, close morning; drops of rain in the morning, and gleams of sun during the day; fine night.
 13th.—Bright morning, fine day, and dark night.
 14th.—Fine and bright early; overcast at 11.30 A.M., with occasional sun, and dark night.
 15th.—Wet early; fine at 9 A.M., shower at 10 A.M., bright sun at 1.30 P.M., but generally dull.
 16th.—Slight shower early; fine, with bright sun and high wind in morning; the wind less in the afternoon; fine evening.
 The temperature for some weeks has been very uniform and near the average; the rainfall since the downpour of July 17th has been small.—G. J. SYMONS.



A TOUR IN IRELAND.

SINCE my last notes appeared in these pages over 1600 miles have been traversed in the cause of horticulture, and, as was indicated in the article mentioned, upon the date of its publication the writer was wandering in the Green Isle through farms, orchards, and gardens. The objects of my mission were twofold—first on behalf of the British Fruit Growers' Association, in company with Mr. Gordon, to make careful observations respecting "the present condition and prospects of fruit culture in Ireland;" and secondly, to see as many of the best gardens as time would permit. Ostensibly a holiday, the journey really involved a considerable amount of hard work and much thought in formulating a programme. Change of occupation and change of scene are often, however, more beneficial than mere idle rest, as I have proved on many occasions, the present amongst the number. Having travelled throughout the length and breadth of the land, it may be imagined that my note-book is well charged with records destined to be transferred to the Journal pages, but in the present introductory article generalities can only be dealt with. Full details of the fruit observations will be given in the official report to be published by the Association, while the gardens visited will be described in early issues of the *Journal of Horticulture*.

Ireland is a comparatively unknown country to English gardeners, for though the larger shows attract exhibitors and others to Scotland, it is so rare that any event of this kind is sufficiently important to induce a journey to the sister isle, that the country may be said to be horticulturally forgotten. There was a time when nurserymen's travellers used to regard their Irish journeys as amongst the most profitable they undertook, and through them we occasionally heard of what was being done in gardens and gardening. The times have changed; very few commercial horticulturists now visit Ireland, partly, doubtless, because money has not been so freely expended in gardens there during recent years, but mainly for the reason that the home nurserymen, like the Messrs. Dicksons of Belfast and Newtownards, McClelland of Newry, and the Hartlands of Cork have so extended the scope of their respective businesses that there is little room for outsiders except dealers in specialties. A few gardeners who have lived in Ireland, or have friends there, pay an occasional visit, but they seldom venture on an extended tour, and if it were not for our writing friends in the country itself very little would now be heard of Irish gardening news. Yet although the gardens are fewer and more widely placed, as good practice can be seen there as anywhere in Great Britain, and no thoughtful man could take a journey through the best districts and gardens without learning some useful lessons.

Apart from all political considerations (and horticultural papers have no politics) farming and gardening are in many ways very different in Ireland from what they are in Britain. Except in a few districts the rainfall is largely in excess of the average in this country, reaching as high as 45 or even 50 inches as an average, which is almost tropical, and the effects upon vegetation and cultivated land generally can be readily understood. This, too, as regards most districts is not confined to certain seasons of the year, but means continual almost daily drenching showers, which with the attendant cloud and consequent diminution of direct sun heat would seem to indicate a deficiency of ripening power that would have marked effects on seed and fruit bearing plants and trees.

But another agency comes into operation—the uniform mildness of the climate, and as regards trees the want of ripening influence is not so seriously felt as might be imagined. Still it is a difficulty that requires consideration, and some of the best examples of fruit culture are found in open exposed situations upon the eastern side of the island. The effect of such a rainfall upon the fertility of the soil must be great, and it is quite certain that in many districts where the land has deteriorated in productiveness it is due to the fact that but little is added to restore the fertility exhausted by the crops or washed out by the rain.

It is a common idea that Ireland is so largely composed of mountain and morass that the area of land suitable for cultivation is extremely small; as a fact, out of about 20,000,000 acres forming the total area of the country only 5,000,000 are cultivated, and judging from my observations not half of that land is employed to the best advantage, while the area of cultivated land could be largely increased. A large portion of the unoccupied land is, of course, quite unfitted for farming or gardening in any form, and it would be a waste of money and labour to attempt reclaiming many swamps or bogs and rocky wastes; but there are deserted or thinly populated districts comprising land that could be easily rendered as fertile as any in England. It is remarkable, but the same thing is seen in Britain—that most of the lowest rented land is the worst cultivated and gives the worst returns, not because the soil itself is bad, but because insufficient capital and labour are expended upon it to insure profitable crops. Energy, industry, and enterprise give similar results in Ireland to those secured by the exercise of those qualities in other countries, and examples of successful cultivation can be found in nearly every county, from Londonderry and Antrim in the north, to Cork and Kerry in the south; but they are not so numerous as they should be, or as they might be expected to be, when the effects of skilful labour are so apparent.

In the north of Ireland we see a greater variety of crops—Potatoes, Oats, Barley, Wheat, and Turnips well grown, the land clean, and in many cases the farming would compare with the best in England. Flax, however, is there the staple of the agricultural crops, 100,000 acres in the province of Ulster alone being devoted to it, though in the three other provinces together the total does not exceed 2000 acres. Flax is an exhausting crop, but it is generally sown with Clover or Grass, is pulled in August, and followed by pasture for a year or two. The cultivation, pulling, steeping, and preparation for the mills employ a number of people, while the linen factories and bleaching establishments provide a still further important industry in the neighbourhood of Belfast and several other towns in the north. Flax is a fairly profitable crop, but some farmers complain that their returns are not so good as they were formerly; on the other hand, I met some who admit that combined with other crops it enables them to gain a comfortable living.

One point strikes a visitor who happens to travel through Ireland about the time the grass is cut for hay, and that is the enormous return obtained; the fields early in August were thickly studded with huge haystacks more like small ricks than such as we are accustomed to see. It was also strange to see men and women tossing the hay with their *hands*, and more than one intelligent man assured me it was too heavy to use forks. Owing to the uncertain weather and frequent rain the hay has to be left out much longer than with us, and this must have a deteriorating effect on its quality. On some estates grass silos have been tried and proved very satisfactory in wet seasons. A run through the country gives a good idea how the term "Green Isle" has been obtained, for the fresh green of the grass is very noticeable, and the proportionate acreage is great in many districts.

Potatoes constitute such an important crop that they demand a word or two of reference in these notes, and it is deplorable that the rumours as to the prevalence of disease in the South are

only too true. I passed thousands of acres of Potatoes that look as though they had been burnt, and the effect of such wholesale destruction can be imagined where so much depends upon the crop as the staple food of the people and the pigs. In England, even amongst the poorest classes, the Potato is regarded as a useful vegetable, but as an accessory only; in the South of Ireland it is perhaps more important than bread. It has been said that "The Potato is the curse of Ireland," and there is some truth in the statement, for where nothing else is grown a bad season means a famine in its worst form. North of Belfast I observed comparatively little disease, though it was appearing in places, but from Cork to Skibbereen an old farmer assured me that there will be scarcely a sound tuber saved, and it is said that the moisture laden winds from the Atlantic spread "the blight" with astonishing rapidity. It may be asked, Is the system of cultivation best calculated to guard against the evil? and it must be admitted that it is not. In too many cases the bed system is adopted; the Potatoes are planted thickly, and the dense masses of succulent haulm in such a climate afford a most suitable nidus for the fungus. Even where the rows are separate they are too near together with few exceptions. Then, too, although so many improved varieties of Potatoes have been sent to Ireland quantities of coarse sorts are still grown that would not be tolerated here, and cannot be expected to yield good results even in the best seasons. Before closing this Potato paragraph it must, however, be remarked that the Irish people know how to cook the popular tuber to perfection. In the hotels and restaurants of the cities, in farm houses, and in the cabins of the poor, the Potato is cooked in its "jacket," and turns out a delicious ball of white floury substance such as a Briton can fully appreciate. The only badly cooked Potatoes I had during the whole of my journey were prepared in the conventional English method.

As to the fruit, a few words must suffice at present. Orchards are confined to a few districts, and in only one did I see any attempt to grow fruit on the market garden system, but there the results were satisfactory in no ordinary degree, the appearance of the cottages, the people, and the whole neighbourhood indicating a degree of comfort that is foreign to Irish country districts. We found Apple trees flourishing and bearing good crops from the extreme north down to Cork. Small fruits also succeed, but in respect to the orchard trees bad cultivation, or no cultivation at all, is the rule. Old lichen and moss-covered trees predominate. Few attempts are made at planting young trees, and if that is done they are placed in the same situations as the others occupied, careless gathering of the fruits, no selection for market, nor attempts to prolong the season, characterise the methods adopted. Yet the occupiers of some orchard land were paying over £3 an acre, and earning a good living, while land on the same estate was let at 10s. down to as low as 4d. per acre.

Reference to the chief characters of Irish gardens must conclude this rather long introduction, and first it must be said that Ireland is a beautiful country. It abounds in delightful scenery, more mountainous and bolder in character than is seen in England, but as regards most districts less rugged than the Highlands of Scotland or the north of Wales. In the selection of sites for gardens full advantage has in consequence been taken of the natural attractions of the country, and the majority of estates abound in delightful views. Then also the moist warm climate admirably favours the growth of trees and shrubs, with the result that we find magnificent specimen Conifers with other evergreen and deciduous trees, some of which could not be equalled out of Ireland. If, too, we journey south, especially to Fota, between Queenstown and Cork, we come to a subtropical climate, and find Palms, Tree Ferns, Bamboos, and countless other plants that we are accustomed to see grown under glass flourishing out of doors as freely and vigorously as they could do in their native countries. There is thus plenty of scope as regards the occupants of the gardens, and wherever an attempt has been made to effect an improvement full

advantage has been taken of this. The charming glen at Glenstal Castle is a magnificent example of what can be effected in adding to great natural attractions.

Many of the larger gardens are managed upon strictly commercial principles, all surplus produce being sent to market, and it is surprising what some able gardeners accomplish in this way, assisting to maintain extensive pleasure grounds in good condition that would otherwise have to be neglected. One of the best examples that came under my notice was a comparatively small garden in the suburbs of one of the larger cities. It was owned by a wealthy retired merchant who has had a large share of this world's success, mainly due, no doubt, to his own energy and perseverance, but he attributes his progress in a large measure to his love of horticulture. Early morning and evening exercise in his garden has, he says, helped greatly to maintain a naturally good constitution, the healthful mental rest enabling him to concentrate his working hours upon his business. He employs gardeners, but superintends the work himself, and grows flowers, fruit, and vegetables as a hobby, but with the intention of making the garden pay for itself as an example of what can be accomplished. He has ample for his family, sufficient for his friends, for the deserving poor and the sick, the surplus being placed in the market with all the judgment a practical man can exercise, and the result last year was a balance of £80 after paying all expenses. It is true some capital has been expended in producing this result, but a substantial interest has been obtained, and not only in the actual return, but in the satisfaction derived from setting a good example.

Earnest collective thanks to the numerous friends who so kindly assisted in rendering my journey one of the most agreeable I have undertaken must conclude this letter, and I hope to refer to some of them with their gardens individually on future occasions.—LEWIS CASTLE.

GROWING AND SELLING FRUIT.

THE first consideration in growing fruit for profit is naturally how to make the most money out of it, so at the commencement I will mention a few things applicable to marketing and selling fruit in general, and then give some information on planting different kinds of fruit trees, the preparation of the soil, packing, &c., in order to prevent needless repetition.

SELLING.—In order to effect a ready sale for fruit of any kind in these days of keen competition, it is necessary to grow larger and more highly coloured samples than anyone else if possible; to strive after quality—as this is understood in the market—more than for quantity, although the latter must not by any means be overlooked. And here let it be noted, if the fruit is to be sold privately, good flavour and a proper degree of ripeness will be great recommendations to your customers to come again; but if you intend selling through an agent in the market, flavour will count for nothing, but size, colour, and soundness of condition are everything towards securing the highest price. All fruit for sale, therefore, should be grown as large and as highly coloured as possible, gathered and packed before it becomes soft and over-ripe, and should always be honestly graded, that is not putting all the small and deformed fruit at the bottom of the package and a few very fine specimens on the top, but keep each size separate. Next strive to have your fruit in the market when there is not a glut of the same kind there. Very early and late samples always sell the most readily.

PACKING.—This requires great care, for no matter how good the sample is, if it is badly packed it may only obtain the lowest price in the market, and months of labour and anxiety will be lost in a few hours. A few general principles only will be mentioned now, further particulars will be found under each kind of fruit. Always pack as carefully for a short journey as for a long one, and always pack firmly—that is, none of the fruit should be able to move in position when fastened down. All movement means damage. On the other hand, no pressure must be applied to soft fruits. All fruits should be gathered only when perfectly dry, not starting to gather them when there is a heavy dew, or immediately after showers. Pack in small parcels to prevent crushing and fermentation. When gathered send to the destination as soon as possible; delay means depreciation of sample. Be very careful that no damaged fruits are sent, as very few of these will

soon spoil all the good ones if any delay occurs in the transit or sale, and always keep everything perfectly clean and dry.

COMPENSATION FROM LANDLORDS FOR PLANTING.—It is only possible to give a few general hints on this subject, as so much depends on the customs of the locality, the kind of fruit planted, length of the lease, &c., but fruit growing has one drawback to those who are not freeholders, as it necessitates a large outlay at the commencement, and the first few seasons the returns are comparatively small. Again, there is always a certain amount of risk attached to fruit growing which no care or foresight on the part of the grower will altogether remove. It is, therefore, necessary before any planting is done to have a proper agreement as to compensation for unexhausted improvements, drawn up by a competent person, and duly signed by the landlord and all parties concerned. A very fair way, if it can be so arranged, is for the land and trees to be let by auction in case of expiration of tenancy, the incoming tenant paying the outgoing one the auction price for the trees which the latter had planted or purchased, and by this means securing the right to sell again for what he can get, the landlord retaining the power of choice as to tenants, but in the case of refusing acceptance to pay the outgoing tenant the sum offered. Another way is for the landlord to pay for the trees and planting in the first instance, the tenant to pay a fair interest on the outlay as a rent charge in addition to the ordinary rent, or a lease may be arranged for not less than nineteen years, to cover the tenant's expenses for planting by a low rent, and give him an opportunity of getting a return of his outlay. The above remarks apply principally to standard Apples, Plums, and Cherries, which are longest in reaching their full size. Bush fruits give a quicker return, and are also much sooner exhausted.

PREPARATION OF SOIL AND PLANTING.—One great step towards success is to have the soil in a suitable state for fruit trees before planting, and this is especially the case in planting standard trees which will remain in the same position for half a century and upwards. In the first place, then, all fruits require the soil to be thoroughly drained. Stagnant water near the roots is fatal to success. Before planting, therefore, if there is any doubt on the subject dig a hole 2 feet deep, and if water is found in any quantity drains must be laid to take it away before planting is attempted. All drains should be laid not less than 3 feet deep, and down the centres of the spaces between the rows where large trees are to be grown, or they will soon be choked by the roots. The distance of the drains from each other should vary from 10 feet in very bad cases and heavy soil to 30 feet in better and drier positions. All drains should have a good fall to prevent their choking by sediment. Draining will add considerably to the expense of planting, but the cost of this ought not by any means to fall on a tenant. It is not desirable, as a rule, to plant fruit trees where draining will be requisite, as low or flat situations are naturally cold and damp, and liable to be affected by late spring frosts, while hill sides, sloping to the east or south, or high flat lands are the best, because they are naturally drier and warmer. Having made sure the drainage is right the texture of the soil will next require attention. If it is very hard and firm beneath the first spit it should be trenched 2 feet deep or ploughed with a subsoil plough, keeping the best soil on the top; but as a rule, if the land has been previously under good cultivation, no trenching will be necessary if large holes are dug for planting, and the soil loosened well at the bottom. In all cases these holes should be large enough to spread the roots of the trees out flat all round. The trees should always be planted as deeply as they were before, but not any deeper. In wet positions and heavy cold soils it is often recommended to plant on mounds of earth, but it is far better either to correct the soil before planting or to choose a better position, as the roots of trees will always eventually work downwards.

As a rule only Strawberries and Raspberries will require manure when they are planted or a short time previous to planting, except in a few instances where the ground is exceptionally poor, such as light sandy soils. In such a case it will be advisable to give a good dressing of farmyard manure for all kinds of bush fruits also. Strawberries require to be planted in August in order to get a good return the first season. All other kinds of fruit should be planted early in the autumn as soon as the leaves begin to fall. They succeed much the best if a good mulching of litter, half decayed leaves, long dry grass, short straw, or some similar matter is spread around the stem about 1 foot further out than the roots extend, and 4 inches thick. This will keep the roots warm in frosty weather, and keep the moisture in the ground when the dry weather comes in the following summer.

SHELTER.—This is often of great service in spring when the trees are in flower, and much more so in autumn in the case of Apples that are nearly ready for gathering. The strong gales that are often prevalent at that time do much damage, and sometimes destroy all chances of profit that would otherwise accrue. In all

places that are much exposed, therefore, it is well to plant a narrow belt of trees for shelter on the sides where the strongest and coldest winds come from. In most instances this will be the south-west, north-east, and north. Trees for the purpose of shelter should be quick-growing—thick enough to form a good screen—not likely to encourage insects, and sorts that will live in good condition as long as they are likely to be wanted. Observation of forest trees growing near will be the best guide for the planter. The Spruce Fir is often one of the best trees for this purpose, and will grow in most places. The Scotch Fir is also suitable on some soils, and a few Larch may be planted among either of these. The Lime should not be planted anywhere near fruit trees, as it is too much subject to insects. Of course in the case of small gardens where only a few trees are grown there will be no necessity for planting shelter trees, or at any rate it would be impracticable in the majority of instances; but where a number of allotments are grouped together in exposed situations with a view to fruit culture, or in any plots that exceed the size of an ordinary cottage garden, it will pay to make arrangements for this end when the lease or agreement is drawn up.—W. H. DIVERS.

(To be continued.)

ADIANTUM FORMOSUM.

THIS is one of our oldest and best known Adiantums. In the days of large specimen plants this Fern was much sought after for the reason that it is one of the quickest and strongest growers among exotic Ferns, and can by frequent shifts into larger pots soon be readily grown into specimens of any desired size. It is also very accommodating as to temperature and can be grown to perfection in an ordinary greenhouse, in fact better than in a high stove temperature. In a very high temperature it is apt to suffer if the soil be dry at the roots, which is very detrimental to its growth and vigour. Unlike *Adiantum cuneatum* it resents being cut down, nor does this need to be done very often, as it is evergreen, and for three parts of the year at least it is in active growth; therefore, any wholesale removal of fronds in a well managed and active growing plant is unnecessary. The older fronds become brown and shabby in time, but they should be removed gradually as younger fronds arise.

Adiantum formosum was introduced from New Holland in 1820. Its specific name, *formosum*, means handsome, and a well grown specimen, whether small or large, and in a healthy state, is certainly very attractive. The fronds are strong and branching in a vigorous plant, but smaller and lighter are also thrown up at the same time, and serve to hide the stipes of the taller fronds from view. The stipes are black, wiry in texture, and the rachides are the same. The leafy parts of the fronds are deep green, and the pinnules are prettily toothed on the margins. For any purpose where large, broad fronds are required this *Adiantum* is very useful, but it is not a popular Fern for cutting purposes.

Its underground rhizomes are produced very freely round the edges of the pots and over the drainage. They, with their numerous root fibres, absorb a quantity of water at all times, hence the necessity of supplying plenty will be apparent when the plants are in free growth. Being a strong grower a stronger soil may be used for it than is customary with some of the weaker growing varieties of Adiantums. A compost chiefly made up of turfy loam, silver sand, and charcoal broken small, will form a suitable mixture for potting at any stage. Such material needs less compression when potting than lighter soil does, and there is also in it more quality and richness in a form that is readily available for the numerous small fibres to feed upon as they increase in quantity and demand their due share of support. When repotting, any stout portions of these rhizomes that are furnished with a growing point, and which may be accidentally broken off, or intentionally separated from the plant when shifting, may be utilised by placing them thickly together in a 5 or 6-inch pot, covering them with soil, and watering them carefully. These, if detached and potted in the spring, will, in the course of the season, if grown in moist atmosphere and gentle heat, afford some excellent bushy plants. This method of increasing the stock is quite equal to, if not better than, division of larger plants from the fact that fronds are produced of more uniform strength, and particularly so if the portions of rhizomes selected are as near as possible of one thickness.

Plants may be had of almost any size by frequent shifts into larger pots, but the larger the pot the more unwieldy the specimens become, though they are certainly attractive and handsome when through plenty of root room the fronds have attained a maximum height of 2 to 3 feet, and plenty are produced. A 15-inch pot will hold a large specimen, but more manageable plants are grown in smaller pots. A good shift once a year is generally sufficient to grow specimens under greenhouse treatment, but in a moist and

warm stove temperature if large plants are required quickly they may have an additional shift in the early autumn, which, with good treatment, will carry them through the winter in a gently growing condition. Plenty of light, with some amount of shade from direct sunlight in the summer time, is necessary. Liberal supplies of water at the roots, freedom from draughts, and careful general attention, will always secure fine plants of this attractive Fern.—E. D. S.

TOMATO NOTES.

I READ with great pleasure the communication on Tomatoes from "E. D. S." on page 129. He appears surprised we do not see the Golden Tomatoes in our shop windows, nor the Plum and Cherry-shaped fruit. I suppose there is a reason for everything, and the reason in this case is not far to seek. The British public are very conservative about their food. The red Tomatoes found favour in this country prior to the introduction of the yellow varieties, and they only hold their own, as far as flavour is concerned, by popular prejudice, for connoisseurs of this fruit are, without exception, in favour of the yellow varieties. The flavour of these is superb. Could the shopkeepers prevail on their customers to try them, I venture to say the market men would soon supply fruits of this colour in the same manner that they do the red sorts. The Plum-shaped varieties, such as Nesbit's Victoria, are too small for the market, and I fear the Cherry and Currant varieties will never find favour with the general public. They are very ornamental, but for market work we require something more substantial.

When Tomatoes are planted in beds and borders as we usually see them, I have concluded, from close observation, the soil should be very firm, especially if it be light. I prefer ordinary garden soil as hard as bricks. If small plants are put out in such soil they grow sturdily, and soon commence flowering. This I find an important condition, for if the soil is at all loose or free the plants make gross growth, and are often 2, or even 3 feet high, before we get a single flower truss. The blooms produced on such plants do not set so freely as those growing in a firm soil. The difference will be clearly seen when the bunches of fruit are hanging; those on the gross growing plants will be 2 feet from the bed, while those, on the other hand, will require tying up to keep them from the soil. I believe it is an admitted fact that these plants do not require nearly the amount of water it was customary to give them a few years ago. I only have my plants watered sufficiently to keep them from flagging till I have secured the first truss of fruit, neither do I use any stimulant till after this period. I consider it unwise to administer any stimulants to the plants in their early stages, for it produces that which should be scrupulously avoided—viz., gross sappy growth. It is also a mistake to give much water to plants growing in borders, for it has a tendency to aggravate the disease. Of course plants in pots will require a greater supply, in accordance with the quantity of soil at the disposal of the roots. It is surprising what good crops can be produced in a shallow bed of soil. I have grown an excellent crop of Hackwood Park in a depth of 4 inches of soil, and the bed not more than 15 inches wide. It is generally admitted that the round varieties are more esteemed than the corrugated, and rightly so, but good culture has much to do with the shape of the fruit. I have seen a striking instance in point this season. The variety was Perfection; the fruits grown in the house were of beautiful shape, and all that could be wished, while the same variety planted outside has produced ugly corrugated fruit; both sets of plants were from the same packet of seed. The round varieties may not set quite so freely as the other section, but the fruits are heavier in a striking degree.

I am pleased to read "E. D. S." has been successful in resisting the attacks of the disease. There is no doubt previous experience has taught us much on this subject. In the year 1888 the disease caused dire destruction throughout the country, but luckily gardeners did not follow the Micawber policy adopted by our agricultural friends, but set to work with true British pluck to master it. Have we done so? I fearlessly assert we have advanced greatly in that direction. We were aware of the conditions most suitable for its development, and, like sensible people, have fought boldly against these conditions. It has not been mere chance work either, for the season has not been favourable to easy culture. In this district we have the disease, but we mastered it so far as to secure good crops of fine fruit. The conditions favourable to its development being a cold damp atmosphere the remedy is found in the opposite—namely, a light buoyant atmosphere. When the air outdoors was charged with moisture, as it has been repeatedly this season, a little warmth in the pipes has secured the dry conditions so delightful to the Tomato and detrimental to

almost all other plants. I kept my plants quite clear of this dreaded fungus till the middle of July by active watching and constant care, then a few spots of it were discovered. The houses were kept very dry and airy, and I had the satisfaction of seeing the spots die out instead of developing. This state of affairs continued till the first week in August, when I was away from the plants for a week; on my return I found it had greatly developed, but as the crop has been very satisfactory I do not fear much from the results. I should like to hear how the readers of the Journal have fared this season with our common enemy.—JAMES B. RIDING.

THE B. S. WILLIAMS MEMORIAL FUND.

WE have been desired to insert the following in reference to the above fund which is being established. "To perpetuate the memory of the late Mr. B. S. Williams, by investing a sufficient amount to place a certain number of orphans of gardeners on the Gardeners' Orphan Fund as 'Williams Memorial Orphans,' and also to give prizes in money with Williams Memorial Certificates for excellence in the cultivation of plants."

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 B. Wynne, 17, Catherine Street, Covent Garden.
 G. Wythes, Sion House, Brentford.
 R. Young, Fringilla, Linnett Lane, Ollet Road, Liverpool.

Subscriptions, varying in amount from 10 guineas to 10s., have been paid or promised. All subscriptions will in due time be publicly advertised.



NOTES ON THE CRYSTAL PALACE ROSE SHOW.

THE National Rose Society's Metropolitan Exhibition of 1890 is, I think, notable for the way in which the blooms lasted. Never in my experience of N.R.S. exhibitions, and it dates from the Show held in St. James's Hall, have exhibitors had such an easy staging time, or the public gone home at the close of the Show with such fresh young blooms and Sunday buttonholes. It seemed more like a northern exhibition, where one expects blooms to stand, both on account of the cooler air as well as that later in the month Roses are given and possess more stamina. The only day in the past Rose season when we were at all troubled by the heat was at Leicester on August 5th; there the heat was intense, and one exhibitor from Scotland was in the larger classes completely driven off the exhibition table.

The Crystal Palace Show was remarkable for another thing, and that was the awarding of two gold medals for new Roses, a circumstance unique, I believe, in the annals of the N.R.S. Of the best Roses in the Show there was nothing very remarkable; good, of course, the silver medallists were, but there seemed a little uncertainty as to which of the two Catherine Mermets of Mr. Burnside was awarded the medal; for lasting qualities those who saw the good condition of one of them three days after at Gloucester will be able to decide. In the trade division it was thought by some that Comtesse de Nadaillac in Mr. Prince's stand must have run Messrs. Harkness's Catherine Mermet very close indeed.

Another thing to be noticed was the number of exhibitors in Class 17, "open only to amateurs who have never won a prize at an Exhibition of the National Rose Society," always an interesting class. This year there were seven exhibitors, and on the whole good. It is not at all improbable that the winners of the first and second prize will be heard of before long in the front rank. I hope they will. It gave us great satisfaction, although some of us tried our best to prevent it, that a new name was ordered to be engraved on the metropolitan challenge trophy, amateurs. I cannot help thinking that if the plan of the northern Exhibition was adopted here it would lead to greater competition. At present, in order to compete for the challenge trophy, a man must grow largely rather than well and I should imagine there are but

few exhibitors who do not feel it a strain upon their resources to stage forty-eight varieties. This is always the case with us; indeed, it was not until the day before the Show that we had forty-eight varieties out, and it seemed we should repeat our performance of 1888 and be able to show garden Roses only. If we must have a class for forty-eight at the early shows have it, but do not confine the competition for the metropolitan challenge trophy, amateurs, exclusively to exhibitors in one division only; let it be competed for in an additional class for twenty-four or thirty-six, and call it the trophy class open to all amateurs.

The classes for garden Roses were better arranged this year. The first prize stands were very good, and from the interest taken by the public in this class it is not the least important feature in the Exhibition. Would it not be well another year to limit the number of trusses to a bunch? Of new Roses I will say nothing now, hoping to send a few notes upon them later on; but this suggestion I should like to make. When called upon to award gold medals and certificates for new Roses it would, I am sure, give greater satisfaction to both exhibitors and judges if those previously appointed to adjudicate could adjourn at a stated time to a private room with the blooms and specimen plants, and there, seated round the table, go thoroughly into the merits of the Roses one by one, without interruption from eager reporters and the curious public, formally recording their votes in a systematic way, for or against the Roses presented, and decide the question once for all.—J. H. P.

TRUFFLES.

A FEW days ago, under the shade of some large Oaks here, I found what proves to be a fair-sized specimen of the common Truffle (Tuber

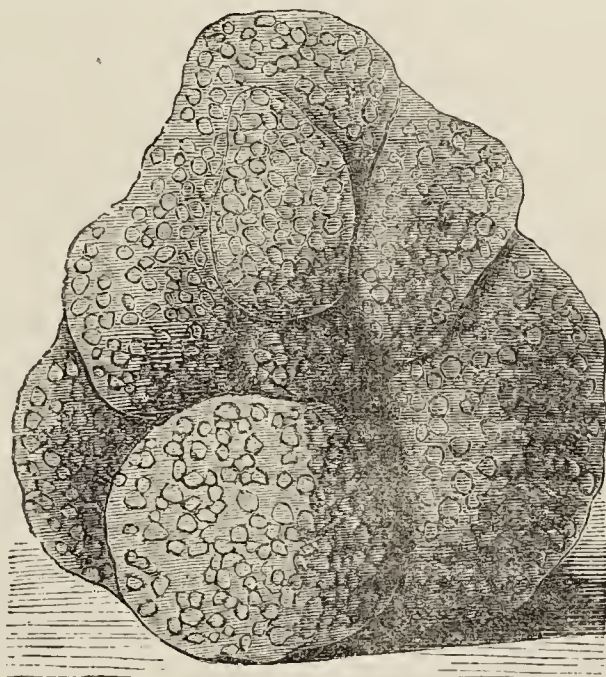


FIG. 23.—TRUFFLES.

æstivum). Not having seen one before I was somewhat puzzled to know what it was. I showed it to several friends, but no one seemed to know it; still I had an idea it must be a Truffle. I referred to "Thompson's Gardeners' Assistant;" there I found it figured and fully described, and this morning (August 20th) I made a further search and found eleven more, but all smaller than the one I found first. Some I found entirely underground, while others had their upper side exposed.

The surface of the Truffle is rough, warty, and black; the flesh is of a greyish colour veined with black. When cut through it has a powerful smell, but not unpleasant. I cannot hear of any being found around here before, though I am informed it is frequently found in Dorset, Devon, and Wilts. Perhaps some of your readers may have found it in other places, if so it would be interesting to know where and under what circumstances. Perhaps I ought to have stated that those I found were growing in soil that was moved about ten years ago.

Thompson says: "Truffles constitute a much-esteemed luxury seldom indulged in by any but the rich. They are used in sauces, gravies, and in a great variety of dishes; indeed it is an axiom with first-rate French cooks that the Truffle improves all that it touches. However, there is no doubt that they are indigestible and injurious when eaten in large quantities."—JOHN WILLIAMS, *Whitbourne Hall Gardens, Worcester*.

[The fine specimen of the Black Truffle figured was dug in an Oak wood in Berkshire. Truffles are regarded as a choice dish on the tables of the affluent. They are generally found in chalky or clayey chalk soils. Just as many aerial Fungi only grow on dead wood, and that of a particular kind, so the Black Truffle is only met with among the roots of trees, and more especially the common and Evergreen Oak and *Quercus coccifera*. It is among the roots of these trees that the Truffles are most abundant, and acquire a perfume that makes them esteemed all over the world. Truffles increase like other allied Fungi. When ripe they contain minute spores not exceeding 1-250th of an inch in diameter, and when the Truffle decays in the ground, these produce white threads, or

mycelium, like Mushroom spawn when running, and a fresh crop results. Dogs are trained to find them, and a "Truffle dog" is regarded as a requisite on some large estates.]

ENGLISH ARBORICULTURAL SOCIETY.

THE sixth annual excursion of the above Society took place on Wednesday and Thursday, August 20th and 21st. It was a new departure for the excursion to last two days, but the success and pleasure that attended the change ought to make it customary in the future, as the extra time at night can be utilised for holding the annual meeting, which saves a day later on the season. The place chosen this year was Skipton and Bolton, in the West Riding of Yorkshire. The party travelled by the railway from Carlisle, where the different contingents met, and arrived at Skipton about 11.45 A.M., and immediately on their arrival were entertained to luncheon at the Ship Inn (the quarters appointed for the Society to stay at) by Lord Hothfield, the owner of Skipton Castle, to whom the Society feel very much indebted for his princely hospitality. After luncheon the party proceeded to visit Skipton Castle, which is famous in history through the Clifford family, which have retained it from 1311. It was given to Robert, Lord Clifford, by Edward II. in the fourth year of his reign. The building is a very fine old baronial castle, and is very dear to most Yorkshiremen, as it forms a connecting link in the history of Yorkshire down to the present noble owner, Lord Hothfield. From the entrance gates a fine view of the castle and grounds is obtained. Mr. Ross, sub-agent to Lord Hothfield, proved an attentive guide, as he pointed out every object of historic or modern interest to the visitors. Close to the entrance gates is a fine English Yew, which is 20 inches quarter girth 4 feet from the ground, and is said to be over 500 years old. The walls of the castle are over 4 feet thick, and as the party inspected the interior of the castle they were shown some fine old tapestry, and the room the "Fair Rosamond" was imprisoned in. Some Spanish Chestnuts were also inspected, and one member of the Society interested his hearers by stating that is the only tree that a spider will not spin a cobweb on. The tower of the castle is 80 feet high, and a fine view of Pendle Hill in Lancashire can be seen on a fine day. Lady Ann Clifford, after the Civil Wars, restored the building in about the year 1659. There remains here a strong muniment room, which is supposed to contain most interesting documents, as the castle has been built about 800 years. On entering the terrace to the east of the castle some fine Sycamores were inspected, one blown down a few years ago had 250 cubic feet of wood in it. The quarter girth of some of these trees was from 27 to 30 inches each; the average of these trees would be about 70 feet; they are planted about 350 feet above the sea level, and, from Mr. Ross's belief, are about 300 years old. Each tree would average about 300 feet of wood.

The party here inspected an ancient meat with much interest; they then proceeded to their carriages and drove to Eshton Hall, by way of Gargrave, the seat of Sir Matthew Wilson, who received them at the front of his mansion, and spoke most hopefully of the future of the Society, and at once consented to become an honorary member; he regretted his inability to accompany them through age, but he said they would find an invaluable substitute in his head gardener, Mr. A. Temple. Eshton Hall is a very fine building. Handsome stone vases adorn the terraces, which were all filled with the old favourite Tom Thumb Pelargoniums, which were one mass of bloom, and had a pleasing effect in contrast with the building that all admired.

A fine tree of the yellow-flowered Horse Chestnut also adorned the lawn, and in the distance was observed the beautiful silver foliage of the Abele Poplar, and on the left were also very fine specimens of the copper-coloured Beech and Wych Elms. Near to the head gardener's house (Mr. A. Temple) there is a splendid avenue of Conifers, including *Thuopsis borealis*; *Juniperus* 30 feet high; *Thuia occidentalis*, 35 feet high; a variegated Thorn, 24 feet high; and a splendid example of what was, after much discussion amongst the members, termed a fine specimen of the variegated American Oak, which had a most pleasing and telling effect in the landscape. There was also an admirable addition in an Evergreen Oak, as an imposing confrère—typical representatives of the vegetable kings of the forest.

Here the party entered the kitchen garden, which is not large, but was well stocked with vegetables. Celery was most healthy and vigorous; Peas in full bearing and healthy condition. Mr. A. Temple confines himself mostly to the old and tried varieties—Veitch's Perfection, Ne Plus Ultra, and Prince of Wales; and he considers those, after long experience, a trio amongst the many varieties of this choice legume hard to beat. A new Pea (Evolution) has been tried this year, and promises to be an immense

cropper, as it fruits well from the bottom of the haulm upwards. All the usual varieties of winter varieties of the Brassica genera also afforded evidence that the kitchen garden at Eshton Hall receives due care and attention. Cos and Cabbage Lettuces on the Vine border were admirable examples of good culture, such as to cause envy in the minds of those who are partial to a good salad.

Mr. A. Temple has not yet had charge of these gardens twelve months, and the progress he has made is wonderful. We were shown on a south wall Peaches of the Waterloo variety on trees planted this year without any protection, quite ripe; also fine fruit on Apples Cellini, Pott's Seedling, an Al variety; Lord Suffield, Lane's Prince Albert, and King of the Pippins; this evidence of success becomes the more remarkable as 8° of frost were registered on the 20th of May last. The glass structures were then viewed. The Peach houses are lofty lean-to houses, and trees of Bellegarde were very fruitful. In the vineries Black Hamburgh, Gros Maroc, and Alicante Grapes were exceedingly well finished. Muscat Hamburgh was also bearing fine bunches of fruit from 3 to 4 lbs. each. These Vines are sixty years old, and were planted something like the historical Vines at Raby Castle in carrion. We observed Madresfield Court inarched on Foster's Seedling as an experiment, but Mr. Temple states he has been most successful with that variety on the old Tokay. The rest of the glass structures were then visited, including span-roofed, stove, and greenhouse plant, structures all filled with well-grown varieties of the usual typical stove and greenhouse plants. Two favourite Melons at Eshton are Countess, a fine pale flesh variety; and Harefield Grove. The party then visited the park, were shown some fine Sycamore trees worth about £20 each, but the proprietor will not have any of his favourites cut. Some fine Larch were inspected, 115 feet high, and 23 inches quarter girth, and supposed to contain over 140 cubic feet. It may be well to mention that all the Larch planted previous to thirty years ago are doing well generally in Yorkshire, which proves, perhaps, that climatal changes have had much to do with the decrease.

The visitors again re-entered their carriages, and drove hastily back to dinner at their rendezvous, "The Ship Inn," Skipton, where the host and hostess had prepared a most substantial dinner for the party. Mr. James Watts, Carlisle, was in the chair, Mr. Balder, sen., Dalston, in the vice-chair and they were supported by the following members:—Mr. J. Davidson, Secretary and Treasurer to the Society; Mr. Coroner Graham and Mrs. Graham; Mr. A. Ross, sub-agent to Lord Hothfield; Mr. John Mitchell, forester to His Grace the Duke of Devonshire; Mr. James Mitchell, Freestone Hall, Leeds; Mr. R. E. Anderson; Mr. Robt. Collins, forester to His Grace the Duke of Sutherland, and Mr. F. Collins, jun.; Mr. William Forbes, Councillor Davidson, Messrs. Bernard Cowan, Thomas Vasey, land agent, and T. Gibson, journalist, South Shields; Mr. Jos. D. Coxon, forester to His Grace the Duke of Northumberland; Mr. Robt. Robinson, Castle Eden, Durham; Mr. Wm. Fell and Mr. Brown, Wentworth Nurseries, Hexham; and Mr. Jcs. Robson, Nurseryman, Hexham; Mr. Daniel Polson, *Hexham Herald*, and Mr. J. Balder, jun., land agent, Hexham. After dinner the annual business meeting took place, when Mr. Wm. Forbes, forester to S. C. Lister, Esq., Swinton Masham, Yorkshire, was awarded the Society's first prize of a silver medal for an essay on "Timber Trees." The election of officers also took place, Mr. Thomas Taylor, Chipchase Castle, being elected President for the ensuing year.

The next morning the party breakfasted at seven o'clock, and their carriages were ready at eight o'clock, whence they proceeded to Bolton Abbey, the seat of His Grace the Duke of Devonshire. The party were met by his head forester, Mr. J. Mitchell, at the Devonshire Arms. On entering the grounds to the right is a fine view of the Abbey, and to the left the shooting lodge of His Grace the Duke of Devonshire, which had a very fine mixture of herbaceous plants alongside of the lodge. A peculiar formation of the river was pointed out as containing extraordinary contortions and gyrations—the Skipper's Wheel. Close to the Abbey, to the left of it, are some large Ash trees supposed to be over 200 years old, 90 feet high, and 3 feet quarter girth at the ground. From there is also seen a very fine waterfall, which reminds one of the charms of Wordsworth's poem, "The Falls of Lodore." Here are also some handsome Sycamores. The Abbey is a fine old classic building, but time and space will not permit us to dwell too long on the historic associations of it, all of which the party explored and felt the deepest interest in. In a line with the Abbey is a specimen of the true Irish Cross erected as a monument to Lord Frederick Charles Cavendish. Further on is also a drinking fountain to his lordship's memory. From there is also obtained a view of the old deer forest, which contains fine old red deer. Crossing the river Wharfe you enter Wharfedale, and on a summit get a grand view of Bardon Tower, 300 feet above the level of the Wharfe, and the home of the Shepherd Lord Clifford.

At different parts of the river there are three most beautiful views; the dell here was most enchanting, Mountain Ash in berry contrasting so well with the other shades of forest trees.

The party entered the Old Deer Forest at a point called the "East Nab," and viewed some fine old gnarled Oak trees, which the party thought ought to be photographed, as they are now in the age of decay, having been planted it is supposed nearly 1000 years ago. They are about 50 feet high. The party here viewed what is termed the Valley of Desolation, which is so called because a tremendous flood once devastated trees and all before it. However, at the time of our visit it had not much semblance to that appellation, but quite a cheery aspect instead. Another beautiful waterfall was here inspected of over 40 feet high, quite perpendicular and precipitous in the arrangement of the threatening boulders that threatened to come down in the seething cauldron below. The plantations under Mr. A. Mitchell's care are 1721 acres, and there are twenty-eight miles of walks in them, which are at least cleaned twice a year, principally for the convenience of visitors. Several plantations were here viewed, which were interesting to the Society. One plantation of 194 acres had been planted by Mr. Mitchell, and included trees nine, six, and four years old, principally of Larch, which were free from disease, this never appearing till they are about fifteen years old. The subsoil is a yellow clay, accompanied with a sandy grit. Barden Fell Wood was also visited, including Larch and Scotch Fir, all in a very healthy condition. The party then inspected Barden Tower, also Pembroke Seat, of which there is a splendid view, rich in woodland and valleys, with the continual roar of the Wharfe over its rocky course.

The party from here adjourned to Strid Cottage, the house of their esteemed guide, Mr. J. Mitchell, where a sumptuous luncheon had been prepared by order of the Duke of Devonshire. The Strid Cottage is a fine Gothic structure, large and spacious, with a terraced garden in front, and there is a fine home nursery where Mr. Mitchell grows thousands of seedling trees. After luncheon, as Mr. Bernard Cowan the night before had carried a proposition that lady members be admitted to the Society, on the motion of Coroner Graham, seconded by Mr. Wm. Fell, it was decided that Mrs. Mitchell be the first honorary lady member in recognition of the kindness shown by her to the party. A vote of thanks to the Duke of Devonshire and Mr. Temple, a quick move back to catch the train brought the Society's two-days trip to an end, and it may be safely said that the members received much valuable instruction from their outing, accompanied on all sides by a genuine Yorkshire welcome. This will be remembered by the Society as one of their most successful excursions. —BERNARD COWAN.

FUCHSIAS FOR BEDDING.

THAT Fuchsias are destined to take high rank in the embellishment of the flower garden in the future does not admit of a doubt. Every year's experience more fully proves their value. Whether in sunshine or rain they continue flowering, and planted in beds or borders have a charming effect. At Heckfield Fuchsias were favourites with the late Mr. Wildsmith, and effectively employed in the flower beds on the terrace there. Grouping several plants together on slightly raised mounds on the grass, choosing free-growing varieties of a wavy habit, displays them to the best advantage. Specimens from 4 to 5 feet high, or rather more, are suitable for this purpose, those of less size not being sufficiently imposing in appearance, nor should the plants be less than 2 feet through at the base; the branches should be graceful and glowing, not having been pinched too late before flowering commences. Arranged in groups of three or more plants together of one variety, with a lawn space of quite 6 feet between them, a pleasing effect is produced. The pots are plunged over their rims, and the roots well supplied with water. If the position is partially shaded so much the better for the successful growth of the plants; hot sun with a parching dry air not being the best of weather for Fuchsias.

To have the plants in good condition for this form of decoration they need preparing by striking cuttings in the autumn, keeping the plants steadily growing during the winter months, and affording them a season's growth in the greenhouse until large enough for the purpose. The following year they will be quite ready to take, when large enough, their place on the grass, or if some are employed in the beds these will come in as specimens for the grass. Those less than 2 feet high, when needed for large beds, are useless for giving immediate effect. Whether for beds or as specimens on the grass, a special system of preparing the plants in the spring must be practised. They must not be grown in heat with the idea of their attaining a large size previous to placing them out, and then expect

them to flourish. Much more likely are they to shed a great number of leaves. The plants should be prepared in cool quarters, to induce a stocky hardy growth, so that when planted they will take freely to their new quarters. In hot dry weather Fuchsias enjoy plenty of moisture at the roots, and indeed they must have it if success is expected. The manner of planting and the arrangement on the grass must be left to personal taste, but in my opinion a mass of one variety is preferable to mixing the colours, which gives a too "spotty" appearance. Having recently had opportunities of inspecting many varieties besides those we grow here, I give a list of the most suitable for planting out.

Annie Earle.—This is a free flowering variety, having very short blooms, yet is most effective.

Mrs. Marshall.—Most profuse in flowering, having a graceful habit, one of the best.

Madame Cornillon.—Although an old variety, still one of the best. The habit is somewhat stiff, and bears abundance of bright looking flowers.

Rose of Castille.—A well known free blooming variety, of a somewhat erect yet free and floriferous habit of growth.

Tower of London.—Very suitable for outdoor growth. The flowers have a bold appearance, and are of large size.

Daniel Lambert.—Scarlet and purple; free in growth and effective.

Henry Brooks.—Free flowering, and well adapted for the purpose in question.

Elegans.—Bushy habit, short-jointed growth, very free in blooming.

Charming.—This is especially graceful. The foliage pale green, the flowers borne freely in graceful clusters.

Lord Beaconsfield.—A pale self-coloured red. The tube is of extra length, strong growth, and a most effective variety, especially on grass.

Annetti.—This having very large foliage has a bold appearance. It does not flower well in the shade, but in the open its bright red flowers are freely produced.—E. M.



EVENTS OF THE WEEK.—To-day (Thursday, August 28th) is held the Show of the Oxfordshire Horticultural Society. On Friday Exhibitions are announced by the Dunfermline and West of Fife Horticultural Society (two days), and the Montrose Horticultural Society (two days), while Sandy (Beds) Show is fixed for the same day. On Saturday the annual Exhibition of the Falkirk Horticultural Society will be held.

— THE WEATHER.—This of late has been cold and showery in the Metropolitan district, and on Sunday afternoon a violent hailstorm did considerable damage in many suburban gardens.

— GRAPE AND DAHLIA CONFERENCE AT CHISWICK.—This combined Exhibition of the noblest of autumn flowers and the most important of dessert fruits, to be held on September 23rd and 24th, ought to be and doubtless will be, both attractive and instructive. The Dahlias are to be staged in groups of Show, Fancy, Cactus, Single, and Pompon varieties. Collections of Grapes are to be arranged in groups: A—Sweetwater Grapes, including Chasselas and Muscadines; (1) Black or purple berried varieties; (2) White, green, or golden berried varieties. B—Muscat and Frontignan Grapes: (1) Black or purple berried varieties; (2) White, green, or yellow berried varieties; (3) Frontignan. C—Vinous or late keeping Grapes: (1) Black or purple berried varieties; (2) White or golden berried varieties. Classes are also provided for Grapes of very high flavour (any kind). American varieties: Grapes grown entirely in the open air; Grapes grown under glass without artificial heat; foreign-grown Grapes; pot Vines with fruit; examples of packing Grapes for market, to be sent by rail; examples of packing Grapes, 4 lbs. to 6 lbs., for private use, to be sent by rail; examples of the enemies of the Grape Vine—diseases, injurious insects, &c. Thus this programme is sufficiently comprehensive, and the Exhibition should attract a large number of visitors. The Dahlia Conference will be held on Tuesday, September 23rd. Mr. Harry Turner (President) in the chair, and papers will be read by Mr. Shirley Hibberd, Mr. T. W. Girdlestone, and Mr. W. H. Williams. The Grape Conference will be

held on Wednesday, September 24th, Dr. Hogg (President) in the chair, and papers will be read by Mr. T. F. Rivers, Mr. R. D. Blackmore, Mr. W. Thomson, and Mr. W. Coleman. The opportunity seems a fitting one for a gardener's holiday, with the object of gaining information that may be of service both to gardeners and their employers.

— THE CRYSTAL PALACE FRUIT AND DAHLIA SHOW will be held on Friday and Saturday, September 5th and 6th. On Friday at 3.30 P.M. the British Fruit Growers' Association will hold a conference in conjunction with the Show, W. Rait, Esq., in the chair. Papers will be read on "Ireland as a Fruit Producing Country," Peaches and Nectarines, Plums for market and Cherries for market. At the Brighton Conference on September 11th the Mayor has promised to take the chair, and several important papers will be read.

— THE POTATO CROP IN IRELAND.—All will regret to see such a dismal account as is given in this Journal on page 160. I think much might be done to avert such a wholesale loss by planting more of those sorts that come early to maturity, and can be cleared off the ground long before the heavier cropping sorts are fit to lift. We have been working on this principle for the last eight or ten years, and we never have any serious loss by disease. What little loss there is in weight of crop is amply compensated for in the fact that every foot of ground so occupied is at once filled up with winter vegetables—Broccoli, Brussels Sprouts, Savoys, winter Spinach, Turnips, &c., of which full crops are secured, which cannot be done after later sorts.—R. I.

— LATE DUKE CHERRY.—Those who require a good late Cherry cannot do better than plant this variety at the present time. We have fruits of it hanging on a tree growing against a wall with a west aspect, and the weather experienced of late has not been of the best for the long keeping of Cherries.—E. M.

— PEACH GROSSE MIGNONNE.—This is an excellent early outdoor variety. We gathered good fruit of it from a heavy cropped tree on August 6th. The colour on the sunny side was very rich, and the flavour quite first-rate, when we consider how much against good outdoor Peach culture the weather has been of late.—E. M., *Hants*.

— DRACÆNA LINDENI SEEDING.—Mr. R. Saunders writes:—"We have at the present time a plant of *Dracæna Lindenii* carrying seven seed vessels, with every appearance of maturing them. I believe it is somewhat unusual for the plant to produce seed. I may add that they are the only ones that set on a spike 18 inches long, with some hundreds of its very fragrant and comparatively insignificant flowers."

— VERATRUM ALBUM.—This is another rarity now in flower here; in fact it has been out a considerable time. Its appearance is that of a very robust Butterfly Orchis (*Habenaria*). It is about 30 inches high, growing in a specially prepared Lily bed; good soil, but not peat. Flowers of a distinct character are scarce at the end of summer, but this is one to strike an observer. It seems to require to be established a long time before it throws up a flower spike, otherwise I should say it is a hard plant to kill.—J. R. N., *Camden*.

— BULBS FOR THE LONDON PARKS.—Messrs. James Carter and Co. request us to announce that they have again the entire orders for bulbs to be planted in the London Royal parks, and also the parks and gardens under the control of the London County Council. These include Hyde Park, Regent's Park, Battersea Park, Kensington Gardens, Victoria Park, Kennington Park, Hampton Court, Thames Embankment, Victoria Embankment, Finsbury Park, Southwark Park, Ravenscourt Park, Bethnal Green, Leicester Square, Myatt's Fields, Dulwich Park, and Clissold Park.

— CALIFORNIAN FRUIT.—The scarcity of most kinds of fruits throughout the Eastern and Central States makes the good crop of Californian fruit this year of greater importance than ever before. The people of the United States have the advantage of living in a country so large that they can supply themselves with necessities and most luxuries despite any scarcity that may prevail. California fruit has heretofore been reckoned superior in appearance, but hardly up to the mark in flavour and quality. This has been due perhaps to excessive reliance on irrigation, just as many of our own fruits are watery and poor in an extra wet season. But good or poor, the fruit of the Golden State will this year be in demand.

— THE SAGO PALM.—The Sago Palm bears fruit but once. Its load of nuts is its final effort; it has fulfilled its allotted task in the

great round of Nature, and there remains nothing for it but to die. The nuts become ripe, and are strewn in thousands around the tree until the fruit stalk stands up by itself empty and bare. The great branches turn brown and drop one by one to the ground. Inside the trunk the work of decay is going on until what at one time was a mass of white Sago and pith becomes nothing but a collection of rotten brown fibres. One day the trade-wind blows perhaps stronger than usual, and the leafless column of the trunk falls with a crash, destroying in its fall many of the young Palms that are already springing from the nuts scattered some months before.—C. M. WOODFORD.

— PEA WILLIAMS' HOLLOWAY RIVAL.—I have grown this variety for two seasons, and consider it the most prolific main crop Pea I have yet had. The habit is the counterpart of the good old Harrison's Glory, but for productiveness the latter is "nowhere." The height of Holloway Rival is in ordinary seasons about 3 feet; this year, however, it has added another foot to its former record, while from the ground to the top of the stakes the plants are covered with pods, each of which contains from seven to nine peas. As far as the flavour is concerned few persons, I think, would ask for better, for even when getting somewhat old I have heard them pronounced "delicious." It has the reputation of being mildew resisting, and as far as our experience goes this reputation is maintained. While others alongside of them are smothered this variety is free from it.—HANDY ANDY.

— FRUIT EVAPORATION.—This is carried on to an enormous extent in America, especially in New York State and California. The fruits evaporated are principally Apples, but nearly every fruit is utilised. The value of evaporated fruit from California alone amounted in 1888 to nearly half a million pounds sterling. It takes 8 lbs. of fresh fruit to make 1 lb. of evaporated Apples. We get an idea of the work entailed in the operation of fruit drying, and the scale on which it is carried out, by the following particulars regarding New York State:—In 1888 250,000,000 lbs. of green Apples and 50,000 quarts of Raspberries were operated upon, which produced more than 30,000,000 lbs. of evaporated fruit, valued at nearly £30,000. During the operation 19,000 tons of coal were burnt in 1500 drying houses, and 45,000 hands were employed.

— ASHES FOR GARDENS.—A great deal of potash is exhausted from the soil by garden vegetables, and even in land naturally rich in this substance it is apt to set into insoluble and unavailable forms for use by growing crops. In gardens always well manured in other respects, a lack of potash may make them less productive than their condition otherwise will warrant. Wood ashes mixed with soil aid powerfully in keeping it moist. The potash then becomes a solvent, and by keeping soil moist it greatly increases the value of any manures that have been applied. It is often remarked that gardens dry up quickly despite good cultivation. This is often caused by an excessive amount of coarse stable manure. It needs wet summers to enable crops to grow without injury over so much coarse manure. When it becomes dry it is an injury rather than a help to plant growth. Wood ashes are a more effective because more constant remedy for drought than watering the plants can be.

— CHARD FLOWER SHOW.—The annual Show was held at Chard August 12th, when £150 was offered in prizes. In the class for nine stove and greenhouse plants in bloom Mr. James Cypher, Cheltenham, was first with grand specimens of *Ixora Regina*, *Clerodendron Balfourianum*, *Erica Irbyana*, *Allamanda Hendersoni*, *Bougainvillea glabra*, *Ixora Duffii*, &c. Mr. Cypher was also first in the class for nine stove and greenhouse foliage plants. In this class he showed a magnificent specimen of *Latania borbonica*. Mr. Cypher was again first for six plants in flower. In this class he had a formidable competitor in Mrs. Pearce of Southampton. The Show was a great success, and the vegetables and plants were equal if not superior to any seen at shows in the West of England. Besides the specimens sent for competition there were several groups of plants and cut flowers not for competition, amongst which was a fine display by Messrs. Jarman & Co. of Chard, who had, in addition to a group of choice plants, boxes of Carnations, containing all the leading varieties, trays of Show and Fancy, also Cactus Dahlias, amongst them being two fine seedlings, which attracted much attention.—M.

— REPOTTING ADIANTUM CUNEATUM.—Cultivators of this plant may safely follow the advice given by Mr. Young on page 136. It is a mistake to be continually repotting this and other Ferns. I have

here a pair of plants of *A. cuneatum* which have not been disturbed for at least ten years. They occupy 20-inch pots, and are as nearly as possible the same size—viz., 5 feet through, or if measured over—that is, from the points of the fronds on one side to the same on the opposite side—8 feet. The fronds are large and of a healthy dark green colour. During such weather as we are now having water is given about every other day, but in bright warm weather they have it every day with occasional additions of such manure as happens to be about—guano, fish-potash, soot, or cowshed water. Indeed they do not object to stronger doses of these than is generally considered safe. There is also here a plant of *A. concinnum latum* that has been in the same pot for some years, and is subjected to similar treatment as the above mentioned. It has at the present time about eighty fronds (all this season's growth), those fully developed measuring from 3 to 4 feet in length.—T. S., *Henbury Hill*.

— RHODOCHITON VOLUBILE.—We grow this somewhat peculiar-looking yet interesting and showy greenhouse climber, and well does it repay the attention it receives. As a supplement to the note by Mr. A. Young, on page 136, I would say that it is easy of growth. Seeds sown in March in sandy soil and given a brisk bottom heat quickly germinate. As soon as large enough to handle the plants are placed in small pots, keeping them in a temperature of 60° until established, when cooler quarters will suit them. As growth proceeds some form of training the young shoots is necessary, so that the flowers which droop downwards may be seen. Wires stretched under and close to the rafters in the greenhouse are suitable, and the flowers show to the greatest advantage. Wire trellises may be made for the plants if they are required for moving about. Strong healthy plants will flower in August from the March sown seed. Red spider is an enemy of this climber, and should be kept in check by copious supplies of water both on the foliage and at the roots. Occasional applications of weak liquid manure promote healthy growth, and consequent freedom in flowering. A compost of three parts loam to one of peat, the same amount of leaf soil, and a free admixture of sharp sand, will grow the plants well.—E. M.

— THINNING FRUIT.—It is a midsummer work of great importance to thin out the winter fruit, and sometimes in a large orchard it looks like an endless job; but where there are large over-bearing trees it is almost a necessary labour if one expects to preserve the strength and vitality of the trees and to get good fruit from them. In thinning out the fruit in the orchard one must be his own judge as to what trees need the work, and for what purpose he wants the fruit. Where the fruit is to be sent to the market a great deal of thinning out will be well repaid; in fact, if fancy fruits are to be raised for sale it will pay to thin out about one-half the fruit. Many orchardists cannot do this, for it seems like a waste of fruit. It may be a waste in quantity, but not in quality. One large juicy Pear or Apple will bring more than two small ones. In addition to this the fancy fruit will often find purchasers, while the small will rot on the stands before anybody cares about buying them. The trees are also injured by allowing too much fruit to remain on the branches. Limbs if not broken off are at least twisted out of shape and the whole vitality of the tree lowered by the excessive strain upon it. One must go through the trees systematically, pulling off all the wormy small fruit that can be found. Sometimes a gentle shake of the tree will bring down many of the worthless, for as a rule they are not so firmly fastened on the branches as the better fruits. Where two or three Apples or Pears are hanging from the same spur it is pretty safe to pull one or two of them off. Fruit should never, for proper development, hang together, nor rest upon a branch or limb of the tree. It should have no support except that which comes from the stem. During years of scarcity of fruit many who make a practice of thinning out fruit other years refuse to pull any off. They become frightened, and think that every Apple and Pear will count. This is a mistake, for if the fruit is scarce the chances are that the price of fancy fruit will be very high, and it will pay all to make the fruit on the trees as large and perfect as possible. The prices they will realise will demonstrate to them the advisability of thinning out in summer, even though there are but very few Apples and Pears on the trees. There is nothing lost in this work when it is properly done.—GEORGE WILSON.—(*American Agriculturist*.)

PEAS.

As Peas are most important vegetables, care is necessary in selecting suitable varieties in order that a daily supply may be maintained. Those, like myself, who have no ground to spare, cannot afford to have

a glut of Peas at one time, consequently reliable varieties must be depended on, and new sorts grown only sparingly. It is very interesting to watch new varieties, especially when they (as is usually the case) are to excel all other sorts in cultivation, and I thank H. S. Easty for giving his experience of new Peas as tried with older sorts. Among the new early Peas I have tried this year Sutton's Improved William I. proved the best. It is a great improvement on the old William I. It comes in more than a week earlier, and is at least 6 inches shorter. With me, as with Mr. Easty, William I. varies, while the Improved William is regular in pod and growth. I think William Hurst will make a good dwarf Pea, but it came up so badly with me that I could not judge fairly of it. I tried Carter's Anticipation. It gave a good crop of good peas very similar to Prince of Wales both in habit and crop. If I were limited to only one variety I think it would be Prince of Wales. I shall be glad if some of your readers will name a more useful variety for the general crop.—J. L. B.



AMATEURS' CLASSES.

THE remarks of "Novice," page 143 of the *Journal*, will be echoed loudly, I imagine, by many of the same class of cultivators. Around the outskirts of towns, and even in them, there are numbers of amateur Chrysanthemum cultivators who spend much time and money in attending to the wants of their favourites, and I know of no body of growers who are more enthusiastic than they are. Dealers in Chrysanthemums find some of their best customers among amateurs, who have in many instances just cause for complaint in the way the classes are made and the prizes allotted. But there is another side to the question. Committees of Chrysanthemum societies have to consider the public, who in most instances are their main supporters. This renders their task of pleasing everybody in the manner of arranging the classes and value of the prizes arduous. Managers keep in mind that the public go to shows to see, not merely numbers of flowers, but the best that it is possible to obtain by advanced cultivation, and thus the classes are arranged in the manner most likely to insure the object in view. It is well known that by far the greatest interest is attached to the "open" classes, and without any exception that I can call to mind the finest flowers have been found in those classes. It will be conceded, therefore, that committees are justified in providing classes that bring together the finest blooms. The second part, that relating to growers within a certain radius, is so arranged to please the subscribers. I know it is a fact that many subscribers who are not exhibitors do not like to see what they term strangers come and take away all or the best of the prizes from the local growers, who may be equally as clever, only they do not happen to have the same opportunities as those who can show in the "open" classes. I know that is the reason why many classes are made with a limitation to the distance in which a competitor shall reside.

From the foregoing remarks it may be thought I do not consider that amateur cultivators contribute sufficient merit to an exhibition to warrant committees in providing better prizes for them. I do not wish in the least to speak disparagingly of this body of cultivators. I know many cases where they have staged flowers which could not be found fault with by the best judges. At one large exhibition the premier incurved bloom was found in the stand of an amateur, and I, as a competitor in the open classes, had to "take a back seat." I was much pleased that the person in question succeeded in beating all his more favoured brethren, because he was, and is still, one of the most enthusiastic amateurs that I know.

That body of cultivators to whom "Novice" belongs may and do contribute largely in point of numbers to a show, but for reasons which are obvious to all, the high quality which is aimed at is not generally found in their exhibits; hence the apparent reason why amateurs are not so well provided for as those who compete in the open classes. In no place that I know are there so many amateur Chrysanthemum growers as around Portsmouth, and nowhere does this section receive so much encouragement at the hands of the Committee of the Chrysanthemum Society. As many as twelve classes in the cut bloom part of the schedule are specially set apart for amateurs, and good prizes are offered. This, it must be conceded, is liberal treatment in a schedule consisting of thirty-eight classes for cut blooms. Yet in spite of this generous treatment they are not quite satisfied, and a considerable number have formed themselves into a society which they term the "Portsmouth Cottagers' Floral Society." This Society has not been formed in antagonism with the chief Society, but rather with a view to assist it, by subscribing to and collecting funds, whereby a special class and suitable prizes may be obtained and offered by this newly formed body of enthusiasts, to be competed for at the parent Society's exhibition in November, such competition to be limited to members of the newly made Society. Such a project cannot but commend itself to all concerned in the advancement of Chrysanthemum culture. I would specially draw "Novice's" atten-

tion to the advisability of his instituting such a society in the neighbourhood where he resides, if he does not already belong to the one named.—E. MOLYNEUX.

NAMING FLOWERS AT EXHIBITIONS.

I EXHIBITED at our Show in two classes for Gladioli, setting up in each class seedlings of my own raising, none of which had been named, placing a card with them, which I enclose. The Judges awarded the first prize to another collection, admittedly inferior to mine, disqualifying my collection for not being named, according to rule (schedule enclosed). I maintain I had complied with the rule as to naming when I affixed the enclosed card, "Gladiolus seedlings." Am I right? I may add there was no question about mine being by far the best exhibited, and an extra prize, equal in value to the first, was awarded, but that only leaves them equal to an inferior exhibit. I enclose herewith a few of the spikes shown after taking off some of the faded blooms, and should be glad to have your opinion of their quality.—H. ELLIOTT, *Jersey*.

[We print Mr. Elliott's letter in order that florists and exhibitors who are interested in this subject may express their opinions thereon. Seedling flowers, and indicated as such, are regularly exhibited in prize-winning stands at the National Carnation and Auricula Societies' Shows, and we have seen prizes awarded under similar conditions for Gladioli at the Crystal Palace. Over the prize list in the schedule sent by Mr. Elliott are these words: "All plants, cut flowers, fruits, and vegetables must be named." The Judges have interpreted those words literally. The "instruction" is loosely framed. In the first place it does not state that "varieties" must be named, but (as regards this case) "cut flowers" only. Mr. Elliott's flowers were Gladioli seedlings and were so named. Ought they therefore to have been disqualified?

We must point out another fault in the stipulation, for it does not say the flowers are to be "correctly" named, and therefore the Judges, following their practice of literal interpretation, must admit a stand if half the flowers are misnamed, while disqualifying a stand of superior examples—seedlings—that are not misnamed.

When rules permit of such an absurd possibility, ought not the object of naming exhibits to be considered? Is it not to enable visitors to procure varieties which they see and admire though do not possess? That, we conceive, is the main object. But of seedlings exhibited the first time there may be no duplicates, and in that case names could be of no service to visitors who might wish to purchase the varieties.

When a person exhibits new flowers of his own raising superior in merit to established varieties we think he deserves additional credit for his achievement. The seedling Gladioli spikes and flowers before us are very good indeed, or, to repeat the verdict of the Judges who disqualified them, "All in quality." Would they have been wrong in admitting them under the circumstances?]

CANFORD MANOR.

THERE are no better-known places in the West of England than Canford Manor, and, judging from what is being done there now, its reputation is likely to be considerably enhanced from a gardener's point of view, as well as that of the inhabitants generally of this favoured part of our islands. There has been a Manor House at Canford from time immemorial, new buildings springing up out of the old ruins, each time larger and more imposing in appearance than the predecessors. As might be expected, it is close—too close, in fact, for modern ideas—proximity to a river, the Stour being the selected watercourse. Part of the building still preserved is supposed by some to have been built by John of Gaunt, Duke of Lancaster, though this is attributed by Hutebins to William Montacute, first Earl of Sarum. At one time the house and large estates connected therewith were owned by the Lords de Mauley, and subsequently were in the possession of the Countess of Richmond, mother of Henry VII., and from whom the Lady Wimborne claims descent. Lord Wimborne, the present owner of this noble property, has largely added to the mansion much of its imposing appearance, including the high tower over the principal entrance, and the perfect interior arrangements being due to him. The fifteenth century style of architecture is that adhered to, but much of the effect is marred by the low position, and from which there was no escape.

My first visit was paid to Canford Manor last January, or at the time when Lord and Lady Wimborne were entertaining the Prince of Wales in a truly royal manner, this taxing the resources of the establishment generally and the garden in particular to its fullest extent. The conservatory adjoining the mansion is a large plain rectangular building, but, as often happens, such structures can be more effectively filled with plants than is the case with more fanciful houses. A serpentine walk runs through the length of the conservatory, and in the beds formed by the curves there were at that time grand masses of forced Rhododendrons, hundreds of Poinsettias, Arums, Salvias, Camellias, and berried Solanums, among which were effectively interspersed handsome specimen Palms, Tree and other Ferns. The walls of the corridor leading from the mansion to the conservatory were all clothed with Lycopodium and Maidenhair Fern, and altogether a very delightful promenade was formed.

There are about fifty acres of dressed pleasure grounds connected with Canford Manor, all being in perfect order and remarkably well stocked with flowering deciduous and evergreen trees and shrubs, and an

exceptionally fine lot of Conifers. In respect to the latter it is very evident the place must, sooner or later, become famous, for nowhere else have I seen so many species in varieties in such excellent health and vigour. I cannot at the present time give the ages and dimensions of the trees, and can only briefly enumerate a few of the many grand specimens to be seen. The Piceas, or Abies as they are now termed, are particularly well represented, the specimens of *Abies nobilis*, *A. Douglasi*, *A. grandis*, *A. cephalonica*, *A. czeelsa*, *A. canadensis*, and *A. pinsapo* being the most noteworthy. There are numerous fine specimens of *Wellingtonia gigantea*, *Cupressus Lawsoniana*, *Thuia Lobbi*, *Taxodium sempervirens*, *Cryptomeria elegans*, and Pines in variety in various parts of the grounds, much taste and skill being expended in their grouping. The erect form of *Cupressus macrocarpa* is very conspicuous in different parts of the grounds, two fine specimens—one on each side of a grand pair of entrance gates—being particularly well placed. Nor have the owners of Canford neglected to add the later introductions of Conifers to their collection, as on all sides may be seen good sized trees of the various handsome *Retinosporas*, some of which are 15 feet high, perfect pyramids of the beautiful *Thujopsis dolabrata*, *Cupressus elegans*, Golden Yews, Golden Thuias, and Junipers. In addition to this, a pinetum on a large scale was planted last winter, no expense being spared either in the preparation of the site or in laying in a good stock of choice species and varieties.

In all directions are to be seen large masses of Rhododendrons, Kalmias, Belgian Azaleas, and other peat-loving plants, all these thriving and flowering remarkably well. Various other beautiful flowering shrubs and trees are represented; and a large rosery filled with dwarf plants, these only recently being pegged down and reduced to really good order, has this summer yielded a wonderful profusion of fine blooms. An Italian garden is a recent addition to the place, and promises to become quite a feature. There is also a large, well-stocked herbaceous garden, surrounded by a hedge of Sweet Briar; and last, but not least, a large flower garden, with fountains and other accessories, close to the mansion. During the winter nearly the whole of these beds are neatly planted with dwarf Conifers, Rhododendrons, Mahonias, Hollies, and Vincas. Very effective were the two very large central beds, each holding about 1500 Conifers and shrubs. The centres were raised considerably and planted in panels. Masses of the bright little *Retinospora plumosa*, including both gold and silver forms; *Thuia occidentalis aurea* and elegantissima, the erect green form; gold and silver *Cupressus Lawsoniana*, and *Taxus baccata aurea* and elegantissima, alternating with masses of dwarf Rhododendrons principally, and the latter are removed late in the spring and their places taken during the summer by *Pelargonium Henry Jacoby*, and other brilliantly flowering tender plants. Being planted in rather poor soil, the Conifers do not grow very strongly, and thus dwarfing them, in addition to long keeping them to a useful size, really improves their bright colours. A very effective summer arrangement consists of a central specimen *Cordylina* 5 feet high, a mass of *Retinospora*, with large numbers of *Lobelia fulgens* pushing through. The centres of fountain basins, filled with *Osmunda regalis* with scarlet Gladioli, are very effective, and other somewhat similar combinations are good. Beds of dwarf Hydrangeas are very showy and certainly very uncommon. Grand standard Zonal *Pelargoniums*, 5 feet high, with heads 4 feet through, the pots containing these being plunged in the turf, are remarkably effective; and fine specimens of *Latania borbonica* and green *Dracenas*, in cork-covered tubs, set on the terraces, are also highly ornamental. Altogether this flower garden is a good example of what can be done towards beautifying a garden in the winter, empty or naked beds presenting anything but a cheerful aspect, while the contrast afforded by the Conifers and other hardy ornamental plants with bright summer flowering plants is far more pleasing than a mass of the latter only. I must not omit allusion to a grand *Magnolia* wall overlooking the flower garden, this probably being quite unique. It is 250 feet long and 25 feet high, and at the present time the trees are flowering abundantly.

There are a useful lot of plant and fruit houses located near to the kitchen garden, and in this department very great alterations and improvements have been made since Mr. T. H. Crisp has been in charge of the gardens generally at Canford Manor. The vineries have been completely overhauled, both the borders and Vines being renovated, and already there is a marked improvement noticeable. Muscat of Alexandria is very good indeed, and Muscat of Hamburg is very rarely seen in such superior condition, this highly flavoured Grape being one of the most difficult to grow. Gros Colman promises to be very large, and Alicante will be fine. All are carrying good crops and give evidence of superior cultivation. The Peach houses were much pulled about last autumn, many worthless old trees being superseded by serviceable young trees brought in from the open walls, and already the character of the crops has greatly changed for the better. Figs in pots and otherwise are good. Mr. Crisp is much pleased with Veitch's new Figs, notably St. John's, Violet Sepor, Bourgasotte Grise, and Bourgasotte Blane. Some of the trees in 10-inch pots have yielded fifty fine fruits, and are good examples of what can be done with Figs in pots. Melons, Cucumbers, and Tomatoes are all extensively and well grown under glass, and very large quantities of Strawberries and choice vegetables have to be forced. Immense numbers of flowering as well as fine-foliaged plants in pots are grown for conservatory and house decoration, as well as for affording almost unlimited supplies of cut flowers.

Orchids are being taken in hand, and of these there are about 900 plants in addition to *Calanthes*. Already there are good stocks of

Zygopetalum Mackayi, *Phaius grandiflorus*, *Epidendrums*, *Cattleya Mendelli*, *Laelias purpurata* and *anceps*, *Dendrobiums*, *Odontoglossums*, and *Masdevallias* in variety. These are being largely added, recent purchases comprising hundreds of plants. *Calanthes* are particularly valued, these being of so much service during the winter months. Nowhere else have I seen such a grand batch, no less than 800 pseudo-bulbs being grown. They are principally in 32-inch pots, the compost used being fibrous loam, from which all loose particles are well shaken, and well rooted; they are fed with Wood's "Le Fruitier." Scores of *C. Veitchi* have pseudo-bulbs from 12 inches to 15 inches in length, and the grand spikes these give are largely used for dinner table decoration. Carnations, notably the *Souvenir de la Malmaison*, are quite a specialty, about 1000 fine healthy plants being grown, and a grand lot of bloom they will produce next season. Tea Roses are also in great demand, there being 100 strong comparatively young plants of these on their own roots in 10-inch pots, and a considerable number planted under glass. *Maréchal Niel* in several positions is doing exceptionally well, and William Allen Richardson is another great favourite. Both

enclosed by coarse mesh galvanised wire netting, and the whole is kept watered in an ingenious yet simple manner. There being a good water supply and high pressure, this is taken along the top of the wall by means of a perforated lead pipe, and on turning a tap abundance of water quickly percolates through the whole mass of soil and roots. The fronts of the stages are also neatly fringed with Ferns and Lycopods, these rooting in a small quantity of soil enclosed in brick troughs. An old conservatory has been turned into a Palm house, and a very serviceable lot of Palms for house decoration are to be seen in it just now, the Tree Ferns also being in excellent health and vigour.

The kitchen garden, compared with the other departments, is not very extensive, but it is well stocked, vegetables of all kinds being plentiful and good in every respect, cleanliness and order prevailing everywhere. An effort is being made to improve the fruit trees on the walls, the work of re-arranging and replanting being carried on at the proper times. Nowhere else have I seen such fine espalier trained Apple and Pear trees. The fencing used for the purpose is unusually substantial and decidedly ornamental in character, and these are closely



FIG. 24.—CANFORD MANOR.

Gardenias and Bouvardias planted out in well heated pits are in excellent health and very clean, and are found of great service. The usual assortment of stove flowering and fine-foliaged plants are to be seen, including *Allamandas*, *Bougainvilleas*, *Alocasias*, *Crotons*, *Dracenas*, *Pandanuses*, all being of a serviceable size, good health, and very numerous. *Allamanda Hendersoni* on roof of Orchid house is flowering grandly, and will continue to do so for several months longer. About 1400 fine plants of *Chrysanthemums* are grown, and still more double Violets, *Salvias*, *Arums*, *Libonias*, *Poinsettias*, and other serviceable winter flowering plants are being prepared very extensively, and at the present time there is a grand display of tuberous *Begonias*.

The warm fernery is remarkable attractive, quite a transformation scene having been effected in a short space of time. There are an abundance of serviceable plants in this house, but *Adiantum cuneatum* is the most extensively grown for cutting from. The high back wall has recently been covered by Mr. Crasp entirely with Maidenhair Fern, among which *Begonias* of the Rex type are freely interspersed, and the effect is much admired. The plants are growing in light turfy loam

furnished with healthy trees. An excellent crop of Pears are swelling. Those bearing the most freely are St. Michaels, Glou Morceau, Beurré Hardy, Marie Louise, Van Mons Leon Leclerc, Williams' Bon Chrétien, Durondeau, Winter Nelis, Huyshe's Victoria, Knight's Monarch, Verulam, Hacon's Incomparable, Beurré d'Amanlis, Duchesse d'Angoulême, Doyenné d'Alençon, Citron des Carmes, Jargonelle, Eyewood, Beurré Duval, and Vicar of Winkfield. Of Apples, the most productive this season are Cox's Orange Pippin, Farns Pippin, Golden Pippin, Kerry Pippin, Manks Codlin, Wellington, Blenheim Orange, Winter Hawthorden, and Lamb Abbey Pearmain. Apricots and Plums are failures, but Gooseberries, Currants, Raspberries, and Strawberries all yielded good crops.

The foregoing is only a brief outline of what I saw at Canford, there being abundance of material for a much longer notice of the gardens. I should like to add that Lord and Lady Wimborne have every reason to be proud of their beautiful country residence and surroundings, and also to be well satisfied with what is being done by their able and most energetic gardener, Mr. T. H. Crasp.—W. I.

ROYAL HORTICULTURAL SOCIETY.

AUGUST 26TH.

OWING, no doubt, to the fact that many horticulturists are now taking their holidays, the meeting at the Drill Hall on Tuesday last was not largely attended either by exhibitors or visitors. There was, however, a fair gathering at the afternoon meeting when Mr. J. Douglas diseoursed upon Hollyhocks.

FRUIT COMMITTEE.—Present: T. Francis Rivers, Esq., in the chair, and Messrs. P. Crowley, Harrison Weir, A. J. Pearson, J. Cheal, J. Willard, G. Bunyard, W. Warren, G. Wythes, F. Q. Lane, A. Balderston, J. Smith, and J. Wright.

Mr. Allan, Gunton Park, sent a seedling Grape between Muscat of Alexandria and Black Morocco. It appeared to closely resemble the latter variety, and the Committee desired to see it again when fully ripe. Mr. Allan also sent bunches of Duke of Buccleuch Grape grafted on Alnwick Seedling, full, large, and good; Mrs. Pearson, grafted on a seedling Grape, long bunches, and good berries; and Gros Maroc, grafted on Frankenthal, very fine bunches and berries, these possessing the Black Hamburgh flavour in a marked degree, and considered of exceptionally good quality. A cultural commendation was unanimously awarded. Mr. Allan further exhibited a dish of good Strawberries, second crop fruits produced by forced plants of La Grosse Suerée, and for these received a vote of thanks.

Mr. Taylor, gardener to Sir John Lubbock, Bart., M.P., High Elms, Down, Kent, sent fine specimens of Lady Sudeley Apples from a three-year-old tree which had produced two dozen fruit; they were not quite ripe (vote of thanks). Mr. Wythes sent very fine Sea Eagle, also Princess of Wales Peaches from Syon House (vote of thanks). Mr. W. Farr, Patshull Gardens, sent another fruit of his Melon, but, though tempting in appearance, its quality did not justify any mark of approval. Mr. Ely, gardener to J. C. Stevens, Esq., Henley-on-Thames, sent Ely's Favourite Melon, which resembled the Beechwood, but was not so good, and was passed.

Messrs. James Carter & Co. sent a dish of the Blenheim Orange Tomato, orange, with a tinge of red; also a dish of Market Favourite, flat, highly coloured scarlet fruits. The former had scarcely any seeds, but all the fruits were over-ripe for testing their true quality. Mr. Bones, gardener to J. Donaldson, Esq., Tower House, Chiswick, sent very large fruits of Tower House Favourite Tomato. They were considered well grown and of good quality, but not superior to other forms of the Perfection type now in cultivation. Mr. R. Ridley, gardener to F. F. Miéville, Esq., Duncroft, Staines, sent a handsome looking white seedling kidney Potato, and it was advised to be tried at Chiswick.

Mr. T. H. Crasp, Canford Gardens, Wimborne, sent remarkably fine fruits of Red Magdalen Peaches, the finest of the variety ever seen on the table, and a cultural commendation was unanimously awarded. Mr. Crasp also sent a collection of thirty dishes of very good Apples, and a bronze medal was recommended.

ORCHID COMMITTEE.—Present: Harry J. Veitch, Esq., in the chair, and Messrs. J. O'Brien, J. Douglas, E. Hill, J. Dominy, H. Ballantine, Lewis Castle, and Dr. M. T. Masters.

Messrs. H. Low & Co., Clapton, sent a box of flowering plants of Vanda Kimballiana, some of the racemes bearing ten of its bright and pretty flowers (silver Banksian medal). E. G. Wrigley, Esq., Howick House, Preston, sent several fine Cattleyas, for one of which, C. Massaiana of the C. aurea type, a first-class certificate was awarded. Alfred Wilson, Esq., Westbrook, Sheffield, also sent a handsome variety of C. Hardyana which secured an award of merit. M. G. Cooke, Esq., Kingston Hill, Surrey (gardener, Mr. Cullimore) sent two varieties of Lælia elegans, which were not considered superior to others in cultivation and were passed. One variety with broad petals had been previously eertificated. Mr. G. Wythes, Syon Gardens, Brentford, showed several spikes of Satyrium carneum.

Drewett O. Drewett, Esq., Riding Mill-on-Tyne (gardener, Mr. H. A. Keeling), contributed three hybrid Cypripediums, one named C. Constance from C. Curtis and C. Stonei; another named Aliee from C. Spicerianum and C. Stonei; the other from C. lævigatum and C. venustum named Alfred (award of merit). Mr. J. Douglas, Great Gearies Gardens, Ilford, exhibited a plant of Cypripedium Numa with very large dark flowers. It had been previously eertificated. Messrs. J. Veitch & Sons, Chelsea, sent several interesting Orchids, including the true Brazilian Lælia grandis and Cypripedium H. Ballantine, a cross between C. Fairrieanum and C. purpuratum, the dorsal sepal beautifully veined with deep purplish crimson on a white ground. Baron Schröder, The Dell, Staines (gardener, Mr. Ballantine), exhibited two racemes of the wonderful Cypripedium Morganæ bearing four and five large handsome flowers each, the plant producing them having five spikes and twenty-one flowers. A cultural commendation was awarded for these fine specimens.

FLORAL COMMITTEE.—Present: W. Marshall, Esq., in the chair, and Messrs. Shirley Hibberd, C. T. Druery, R. Dean, H. Herbst, W. C. Leach, H. Cannell, B. Wynne, Wm. Kelway, H. Turner, C. Noble, G. Paul, T. W. Girdlestone, J. Walker, F. Ross, and the Rev. H. H. D'Ombraim.

Messrs. J. Veitch & Sons, Chelsea, had a large collection of specimens of ornamental trees and shrubs, including many beautifully variegated varieties (silver Banksian medal).

Messrs. Paul & Son, Cheshunt, exhibited a very bright, varied, and beautiful collection of hardy flowers (silver Banksian medal).

The Rev. H. H. D'Ombraim, Westwell Vicarage, Ashford, showed three good varieties of Gladioli, two spikes of each, the flowers of excellent size and shape.

Mr. R. Dean, Ealing, sent flowers of African Marigolds, and a plant of white Mignon Aster.

Messrs. H. Cannell & Sons, Swanley, had a group of seedling tuberous Begonias, lifted from the open ground on Tuesday morning, the flowers large, bright, and varied in colour. Several good Coleuses were also shown from Swanley. Messrs. J. Cheal & Sons, Crawley, sent boxes of Pompon, single and Cactus Dahlias that made an effective display. Messrs. H. Low & Co., Clapton, showed a box of Lilium Wallichianum superbum and L. nepalense flowers, for which a cultural commendation was awarded. Messrs. Kelway & Son, Langport, had an extensive collection of Gladioli, Delphinium, and Gaillardias, several of which were certificated (silver-gilt Banksian medal). Messrs. F. T. Smith and Co., Dulwich, and Stuart & Mein, Kelso, sent some Hollyhock flowers (votes of thanks), and from the Society's Gardens at Chiswick came a group of Asters in pots.

CERTIFICATED PLANTS.

Cattleya Hardyana, Wilson's Variety (A. Wilson, Esq., Sheffield).—A handsome Cattleya with large flowers, deep crimson sepals and petals; the lip an intensely rich magenta with a yellow throat. (Award of merit.)

Cattleya Massaiana (E. G. Wrigley, Esq.).—An extremely beautiful variety of the C. aurea type. The lip rich gold, netted in the throat, and tipped with dark crimson; the sepals and petals of a peculiar rosy shade. (First class certificate.)

Cypripedium Alfred (Drewett O'Drewett, Esq.).—A hybrid from C. lævigatum and C. venustum. The flowers neat but not remarkable for brightness of colouring. The ovate dorsal sepal was white veined with green, the lower sepals similar; the petals are broad and twisted, spotted and tipped with reddish brown, and edged with dark hairs; the lip yellowish green.

Mentzelia bartonioides (Mr. G. Wythes).—An attractive Mexican annual, with large bright yellow flowers and dense clusters of long yellow stamens; the leaves soft green and cut at the margin.

Geranium Shirley Blue (Rev. W. Wilks).—This was shown by Mr. Wilks as a supposed hybrid, with a letter stating that "A plant of G. Endressi and another named G. Armenum (not the true Armenum), growing side by side, the supposed hybrid appeared in 1888. It is midway between the parents in growth and leaf, the colour being a very pale clear reproduction of the doubtful G. Armenum. Its growth is vigorous and it flowers unceasingly from the end of May until frost comes. The flowers are neat in form, blue, white centre, with rosy veins, the leaves palmately divided. (First-class certificate.)

Lælio-Cattleya Proserpine (Messrs. J. Veitch & Sons).—A hybrid between C. velutina and Lælia pumila Dayana; the flowers of moderate size, the sepals and petals recurving, veined with pale rosy crimson on a white ground, the lip tipped with rich crimson, and heavily veneered with crimson in the centre. (Award of merit.)

Gladiolus Baron Schröder (Kelway).—Brilliant scarlet, with a purple dash of colour in the centre; the spikes long and compact.

Gaillardia Wendell Holmes (Kelway).—Single, rich crimson centre tipped yellow.

Pentstemon Le Borda (Kelway).—Flowers large, very deep purple, and light throat.

Dahlia Duke of Clarence (Cheal & Sons).—A Cactus variety with deep rich magenta flowers. Very effective and handsome.

Dahlia Eclipse (Cheal & Son).—A single variety with large full purple flowers, reddish in the centre.

Dahlia Northern Star (Cheal & Son).—Single, deep red in the centre of the florets, evenly margined with bright yellow.

Dahlia Mrs. J. Douglas (H. Cannell & Sons).—A Cactus variety of a most distinct shade of colour, a purplish salmon, deeper in the centre, and almost bronzy in the outer florets.

Dahlia Muude (Mr. T. S. Ware).—A single variety, with blooms of good shape, pure white, regularly margined with crimson purple.

Dahlia Mrs. Stanley (Mr. J. G. West, Cornwalls, Brentwood).—A decorative variety of the Cactus type, of an extremely bright rosy shade; fresh and beautiful.

Dahlia Canary Bird (Mr. G. S. P. Harris, Orpington, Kent).—A handsome show variety, deep well-proportioned blooms of a clear bright yellow colour.

Phlox Le Soleil (Paul & Son).—A pretty variety with large flowers bright rose shading to white in the centre. (Award of merit.)

Potentilla formosa pallida (Paul & Son, Cheshunt).—A peculiar variety with pale rosy salmon coloured flowers, having a bright crimson spot at the base of each petal. (Award of merit.)

HORTICULTURAL SHOWS.

READING.—AUGUST 27TH.

THE autumn Show of this Society was held in the picturesque Abbey Ruins and the Forbury Gardens, on Wednesday, and presented in several features a most satisfactory advance on the shows of the past few years. The large marquee was devoted to plants, groups, cut flowers, and fruit, while another portion of the Ruins was occupied with one of the most extensive and admirable displays of vegetables ever seen in Reading or elsewhere. The weather was some-

what changeable, with occasional showers, which rather marred the Exhibition as a public gathering, but there was a fair attendance during the afternoon.

FRUIT.

An important portion of the Exhibition was formed by the fruit in competition for the substantial prizes provided by the Society, and the general quality of the exhibits was highly satisfactory, the entries in the Grape classes being particularly numerous. For a collection of eight dishes of fruit Mr. Goodman, gardener to C. Hammersley, Esq., Bourne End, was awarded first honours, showing dishes comprising about twenty handsome fruits each of Pineapple Nectarine, Barrington Peach, Moor Park Apricots, and Washington Plums, all finely ripened; also a dish of very large Castle Kennedy Figs, a good Victory of Bristol Melon, with fairly good Alicante Grapes, and rather green Muscat of Alexandria, the Grapes being the weakest part of an otherwise excellent collection. Mr. Ashby, gardener to Mrs. Fanning, Whitechurch, was second, showing Grosse Mignonne Peaches, Victory of Bristol Melon, Elrue Nectarine, Brown Turkey Figs, Morello Cherries, and Madresfield Court Grapes in capital condition. The third prize was taken by Mr. Aitken, gardener to C. Meeking, Esq., Riching's Park, Slough, Pineapple Nectarine, Jefferson's and Kirke's Plums being his best dishes. There were five competitors in this class. Four entered with six dishes of fruit. Mr. Paxton, gardener to the Hon. C. S. Irby, Taplow, leading with creditable examples of Violette Hâtive Peaches, Lord Napier Nectarines, Jefferson Plums, Brown Turkey Figs, Victory of Bristol Melon, and Madresfield Court Grapes. Mr. Osman, gardener to L. J. Baker, Esq., Ottershaw Park, was second, his Alicante Grapes being remarkable for the density of their bloom, and Buckland Sweetwater was represented by large well ripened clusters. Mr. Maher, gardener to A. Waterhouse, Esq., Yattendon, followed; large Barrington Peaches, good Morello Cherries, and a neatly netted Silver Queen Melon being most noticeable. Peaches were notable for their size, some also were finely coloured, especially the first prize dish of Bellegarde from Mr. Lockie, gardener to the Hon. G. Fitzgerald, Windsor. Mr. Lawrence, gardener to Mrs. Owen Knox, Caversham, was second with fine fruits of Barrington; and Mr. Goodman third with Noblesse. A dozen dishes were exhibited in this class. Nectarines were not so numerous. Mr. Pound, gardener to G. May, Esq., Caversham, was first for Pineapple, beautifully ripened; Mr. Goodman second with the same variety; and Mr. Cox, gardener to J. H. Blagrove, Esq., Calcot Park, third with Victoria. Apricots came from Mr. Bright, gardener to P. Karslake, Esq., White-knight Park; Mr. Howard, gardener to Mrs. Myers, Benham Park; and Mr. Goodman, who took the prizes in that order.

In the class for three bunches of Black Hamburgh Grapes there were six entries, Mr. Ashman, gardener to C. T. D. Crews, Esq., Billingbear, taking the first place for large bunches and good berries moderately coloured. Mr. Osman was second for smaller bunches of rather better colour, and Mr. Pound third for good bunches, but the berries were small and somewhat crowded. With three bunches of any other black Grape, Mr. Osman won first honours with very handsome well coloured Alicante; Mr. Pound was second with heavy bunches of the same variety, and Mr. Turton, gardener to J. Hargreaves, Esq., Maiden Erleigh, followed with Madresfield Court of good size in bunch and berry, but much rubbed. There were three other exhibitors. For three bunches of White Muscat, Mr. Maher took the first place for large well ripened bunches, Mr. Osman followed with smaller bunches, and Mr. Ashby was third for loose bunches but ripe. In the any other white variety class Mr. Pound led with clean examples of Foster's Seedling, Mr. Ashman followed with Buckland's Sweetwater, and Mr. Osman was third with Foster's Seedling.

Apples were well shown in both the classes devoted to them. With six dishes of culinary Apples Mr. Dockerill, gardener to G. W. Palmer, Esq., Reading, took the lead, showing large handsome fruit of Ecklinville, Emperor Alexander, Lady Henniker, Stirling Castle, Warner's King, and Keswick Codlin. Of the nine other competing exhibits, that from Mr. Turton was second, and from Mr. Paxton third. Mr. R. Webb, Beenham, won first prize for six dishes of dessert Apples, showing clean bright samples of Cox's Pomona, Cox's Orange, Worcester Pearmain, Blenheim Pippin, Duchess of Oldenburgh, and Devonshire Quarrenden. Messrs. Howard and Paxton followed. Mr. Goodman had the best three dishes of Plums, fine specimens of Jefferson's, Kirke's, and Monarch. Mr. Howard followed with Pond's Seedling Green Gage and Jefferson's. Mr. Webb was third.

PLANTS.

These were not largely shown, but there were fine specimens in several classes, notably those which gained Mr. Mould of Pewsey the premier honours for nine stove and greenhouse plants. Mr. Aitkin, who had the best six fine foliage plants, also contributed handsome specimen Ferns, Crotons, and Palms; being followed by Mr. Currey, gardener to Lt.-Col. Pepper, Salisbury, and Mr. Howard of Benham Park. Ferns and Selaginellas from Messrs. Aitkin, Howard, and Dockerill were distinguished by their fresh healthy condition. The best specimen new or rare plant was a specimen of *Catasetum Bungerothi* from Mrs. Owen Knox, with a raceme of eight large creamy flowers.

Groups of plants arranged for effect were tasteful, especially that which gained Mr. Aitkin the first prize, Lilies and Francoas forming the chief features. Mr. Bright was second, Mr. Butler third and Mr. Mayne fourth. Zonal Pelargoniums, Fuchsias, Dahlias, Begonias, miscellaneous cut flowers and floral decorations were all well represented, but we cannot devote space to a full record of all the exhibits this week. Roses were admirably shown by Messrs. Perkins & Sons Coventry,

Jefferies & Sons, Cirencester, and E. F. Such. Mrs. John Laing was finely represented.

VEGETABLES.

The exhibits in the special classes provided for vegetables constituted a feature of great interest, and the Reading Society may congratulate itself upon having had probably the finest display ever entered in competition at any show in this country. The quality was remarkable throughout, as well as the care exercised in staging.

Messrs. Sutton & Sons' valuable prizes for a collection of vegetables arranged in a space of 6 feet by 4 feet brought an astonishing competition. No less than fifteen competitors entered, and we have never seen such an effective, even, and excellent display of vegetables at any show in this country. The stages were specially prepared, sloping to the front, covered with deep red cloth, and draped with white tiffany in front. Most of the exhibitors had selected Parsley as the groundwork, and very rarely is such taste seen in the arrangement of vegetables; in fact few would believe what a fine effect can be produced. The Judges had a formidable task in determining the positions of the exhibitors, but after very close examination, the premier award of ten guineas was adjudged to Mr. Lye, gardener to W. H. Kingsmill, Esq., Sydmonton, for a remarkably fine collection of the following sorts:—Perfection, Chiswick Red, and Maincrop Tomatoes; Potatoes, Reading Usset, Satisfaction, Prizetaker, and Windsor Castle; Black Beet, Silver Globe, Imperial Reading, Crimson Globe, and Golden Globe Onions; Yellow Perfection and Snowball Turnips; Solid White and Sulham Prize Celery; Prizetaker Leeks; Mammoth White and Scarlet Runner Beans; Canadian Wonder Beans; Lockie's Perfection Cucumbers; Duke of Albany and The Duchess Peas; Pen-y-byd Vegetable Marrow; Superb White Cos Lettuce; Red Intermediate and Champion Scarlet Horn Carrots, Imperial Cabbage, Autumn Giant Cauliflowers, Matchless Brussels Sprouts, Tom Thumb Savoy, Green Globe Artichokes, Turnip-rooted Beet, and Blood Red Cabbage. Mr. Wilkins, Henstridge, Dorset, was second; Mr. Waite, gardener to Col. the Hon. W. P. Talbot, Glenhurst, Esher, was third; Mr. Bowerman, gardener to C. Hoare, Esq., Hackwood Park, was fourth; Mr. Kneller, gardener to W. S. Portal, Esq., Malshanger Park, fifth; and Mr. Haines, gardener to the Hon. P. D. Bouverie, Colehill House, was sixth. Messrs. Carter & Co., High Holborn, also offered important prizes for collections of vegetables, which brought good competition, the winners being Mr. Lye, Mr. Goodman, and Mr. Waite, who had tastefully arranged and highly satisfactory collections.

Messrs. Webb & Sons, Wordsley, contributed special prizes for vegetables, which were won by Messrs. Bowerman, Waite, and another whose name did not appear, all the exhibits being of excellent quality. Mr. Fidler, of Reading, was another donor of special prizes for vegetables, Messrs. Beckett, Lye, and Bowerman being successful in a good competition. Onions, Potatoes, Beans, Vegetable Marrows, Carrots, Turnips, and Cabbages were all largely and well shown.

MISCELLANEOUS

Non-competing exhibits were numerous and of capital quality, but the most remarkable was a collection of plants and floral decorations from Mr. G. Phippen, Broad Street, Reading, which was arranged tastefully on a long table at the upper part of one of the banks. Messrs. Kelway & Son, Langport, had a large group of Gladioli and other flowers. Mr. E. F. Such, Maidenhead, contributed an extensive collection of hardy and other flowers. Messrs. J. Laing and Son, Forest Hill, sent stands of Tuberous Begonias and hardy flowers. Messrs. J. Cheal & Son, Crawley, showed single Pompon and Cactus Dahlias; Mr. C. Turner, Slough, had large collections of Dahlias, and from The Vineries, Wokingham, Berks, came a collection of thirty large Melons.

It is always satisfactory to be able to record an improvement, and this can certainly be done in the case of the Reading Society's autumn Show for the present year. It also indicates that though specimen plants may become scarce, there is ample material available in a good district to render an exhibition both horticulturally and popularly successful.

WILTS.—AUGUST 20TH.

In the beautiful and well-kept episcopal grounds, and under the very shadow of the beautiful cathedral of Salisbury, the Wilts Horticultural Society held its annual Exhibition of plants, fruits, flowers, and vegetables on the above date. The afternoon and evening preceding the Show being very wet, great anxiety was experienced by well-wishers of the Society as to what the weather might be on "show day." This, fortunately, turned out to be everything that could be desired, with the result that the Committee, presided over by the Mayor of the city (George Nodder, Esq.) and the energetic, courteous, and very business-like Hon. Secretary (Mr. W. H. Williams), are to be congratulated upon the success of their labours in getting together such "good all-round" exhibits. The following are the awards made by the Judges.

PLANTS.

Open Classes.—The absence of Mr. Lock's plants (which are not being exhibited this year) was very noticeable in this division of the Show. For twelve stove and greenhouse plants, distinct, six foliage and six flowering, £15, £10, and £5 were offered to be competed for. There were only two lots staged, Mr. James Cypher, Cheltenham, and Mr. Wills, gardener to Mrs. Pearce, Bassett, Southampton, taking first and second prizes with good all-round stuff. Mr. Cypher's plants, though capitally grown, were smaller than he had been accustomed to stage in Salisbury in competition with the Crediton plants, and com-

prised *Latania borbonica*, large and fresh; *Kentia australis*, *Cycas revoluta*, *Croton Queen Victoria*, *C. Sunset*, and *C. Thompsoni*, having clear well coloured leaves; *Dasyliroton acrotrichum*, and well flowered plants of *Statice profusa*, *Stephanotis floribunda*, *Ixora Pilgrimi*, and *Ericas Turnbulli*, *Austiniana*, and *Fairricana*. Mr. Wills's best plants were *Cycas revoluta*, *Erica Eweriana*, and *Ixora Williamsi*. Mr. John Curry, gardener to Col. Pepper, Milford Hill, Salisbury, was the only exhibitor in the class for nine stove and greenhouse plants, four in flower and five foliage, and he received the first prize for a very creditable lot, showing fine *Cycas revoluta*, *Latania borbonica*, *Crotons Queen Victoria* and *Prince of Wales*, *Allamanda grandiflora*, &c., in good condition.

In the class for six exotic Ferns Mr. Wills secured first position with *Dicksonia antarctica*, *Microlepia hirta cristata*, *Nephrolepis davallioides furcans*, *Adiantum cardiochloenum*, *Davallia polyantha*, and *Davallia Mooreana*, good all-round, fresh, well grown plants. Mr. F. Smith, gardener to the Lord Bishop of Salisbury, the Palace, Salisbury, was a good second, his half dozen including a grand plant of *Gymnogramma chrysophylla Lauchiana*; and Mr. Curry was third with much smaller plants. Mr. H. W. Ward, gardener to the Earl of Radnor, Longford Castle, Salisbury, was easily first for six *Begonias*, distinct, showing well trained, fresh, and finely flowered plants. Mr. A. Robey, gardener to Captain Greenwood, Harsham Cliffe, Salisbury, was second; and Mr. F. Smith was third. Mr. E. L. Brown, Wilton Road, Salisbury, was the only exhibitor of six *Fuchsias* in the open classes, and he was awarded the first prize for a very creditable half dozen plants. Groups of miscellaneous plants arranged for effect in semicircle 12 feet in diameter, have of late years become quite a feature at this Show; but this year there were only two groups arranged in both the open and the class provided specially for gentlemen's gardeners, in both of which Mr. Lock used to successfully compete. There was, however, no falling off in the quality and arrangement of the plants employed on the present occasion. The groups were very close to each other in point of merit and position, and although the latter circumstance admitted of the Judges seeing both arrangements at the same time, it took them some time to arrive at a decision. Ultimately Mr. Wills was awarded first position in both classes; the second going to Mr. Curry in both cases. The first prizes of £5 and £4 in these classes were given by the Earl of Radnor and Messrs. Keynes, Williams, and Co., Salisbury. Bridal wreath was used very effectively and freely in Mr. Wills's groups. Their arched flowered spikes rising out of a groundwork Maidenhair Fern (*Adiantum cuneatum*) giving in connection with several graceful Palms judiciously intermixed a light and pleasing contrast to the brightly coloured *Crotons*, *Celosias*, and the dark green feathery foliage of *Asparagus plumosus* and *tenuissimus*, the whole being edged with *Panicum variegatum*.

Amateurs (within a radius of six miles of Salisbury).—These classes are generally well contested at this Show. For a group of plants arranged for effect in semicircle, diameter 10 feet, Dr. F. W. Coates (an enthusiastic horticulturist) secured the first position, winning the Mayor's cup, value £5, with capital plants most tastefully arranged, the whole presenting a bold yet natural appearance. Mr. E. L. Brown was a good second, and Mr. J. W. Lovibond, St. Anne Street, Salisbury, was a good third with a group arranged in a semicircle of 8 feet in diameter. Mr. Frank Pearce, Crane Street, Salisbury, was a very good first; Mr. E. Waters, Salisbury, was second; and Mr. Heuxman, gardener to Mr. H. G. Gregory, The Island, Salisbury, was a creditable third.

Ferns.—Mr. E. L. Brown had the best six Ferns, distinct; Mrs. Graves, Delapré, Salisbury, the second best; and Mr. J. E. Nightingale, Wilton, the third best, all showing fairly good plants. With six Zonal *Pelargoniums* Mrs. Graves was first and Mr. Lovibond second. Mr. E. L. Brown, Mr. Lovibond, and Mr. Smith, Westbourne, Salisbury, were first, second, and third, in that order, for six *Coleus*. Mr. Lovibond had the best six *Fuchsias* and Mr. A. Robey the best six *Begonias*, both showing creditable plants.

FRUIT.

Open Classes.—In addition to the Society's first prize for a collection of eight kinds of fruit, a silver medal was presented by Messrs. Wood & Son, Wood Green, London, for cultural skill. Four good collections were staged, Mr. H. W. Ward securing premier honours with good all-round fruit, consisting of a medium size Queen Pine, Muscat of Alexandria and Madresfield Court Grapes, large well-coloured Sea Eagle Peaches, Pine Apple Nectarines, Moor Park Apricots, large Castle Kennedy Figs, and Lockinge Hero Melon. Mr. Iggulden, gardener to the Earl of Cork, Marston House, Frome, was a good second, his best dishes being Madresfield Court Grapes, Bellegarde Peaches, and Blenheim Orange Melon. Mr. Evans, gardener to Lady Ashburton, Melchet Court, Romsey, was third; this collection contained a grand dish of Brunswick Figs. Mr. Inglefield, gardener to Sir John Kelk, Bart., Tedworth House, Marlborough, was awarded an extra prize; his collection contained good examples of Black Hamburg Grapes, and very fine Walburton Admirable Peaches, being large, even, and well coloured. Mr. Budd, gardener to F. G. Dilgaty, Esq., Lockerley Hall, Romsey, had the best Pine Apple, Mr. Ward the second best, and Mr. Evans the third best, all showing medium-sized Queens.

Grapes.—Out of six good stands of three bunches of Muscat of Alexandria staged, Mr. Davidson, gardener to Lord Wolverton, Iwerne Minster, near Blandford, was first, showing medium-sized well-coloured bunches. Mr. Inglefield was a very good second, staging larger and more compact bunches, but not so bright in berry. Mr. Budd was third.

Out of a like number of bunches of Black Hamburgs, Mr. Charles Warden was awarded first place for medium-sized compact bunches, perfectly coloured, and carrying a fine bloom. Mr. Inglefield was a very close second; and Mr. Neville, gardener to Mr. F. W. Flight, Twyford, Winchester, was a creditable third. In the any other black Grape than Hamburg class, Mr. Warden again led the way with medium-sized well-coloured bunches of Madresfield Court; Mr. Iggulden being a good second for the same variety; and Mr. Davidson third, showing good well-coloured bunches of Black Alicante. In the class for any other white Grape than Muscat, Mr. Warden came to the front again, showing good sized bunches of Buckland Sweetwater, large in berry, and beautifully coloured; Mr. Ward being a close second with the same variety; Mr. Neville securing the third place with large bunches of Foster's Seedling, which, had they been allowed to remain on the Vines for another fortnight, would stand a good chance at the Crystal Palace if shown.

Mr. Ward had the best flavoured Melon in a good fruit of Sutton's Hero of Lockinge. Mr. Northeast, gardener to Mrs. Torrance, Norton Bavant, Warminster, was second. Mr. Inglefield was first for large even fruits of Walburton Admirable Peach; Mr. Ward being a very close second for large, even, and well-coloured fruits of Bellegarde. Mr. Iggulden was first for medium-sized well-coloured Lord Napier. The name of the winner of the second prize did not appear with the exhibit. There are only two prizes offered in the schedule for Melons, Peaches, and Nectarines. Mr. Ward was first for Moor Park Apricots; Mr. Browning, gardener to Sir Talbot Baker, Bart., Ranstone, Blandford, was second; and Mr. Inglefield third. Mr. Ward had the best dish of Plums, showing large, even, well-ripened fruits of Guthrie's Late Gage. Mr. West, gardener to J. R. Wigram, Esq., Northlands, Salisbury, was second with a nice dish of Oullins Golden Gage; Mr. Iggulden being third. In the class for three dishes of dessert Apples, Mr. Budd was accorded first position, his best dish being Red Astrachan. Mr. Smith was awarded the second position, though in the opinion of those competent to form a correct decision the exhibits from the Palace gardens ought to have been placed first. Mr. Browning was third. With a like number of dishes of culinary Apples Mr. Smith was a good first, staging large, clean, even fruits of the Queen, Emperor Alexander, and Ecklinville Seedling. Mr. Budd was second, and Mr. Browning third. Mr. Browning was first for four dishes of Pears; and Mr. Smith second. This was a poor class. In the amateur classes for collections of fruit, Grapes and single dishes of fruit, Mr. E. L. Brown was the most successful exhibitor; his two dishes of Bellegarde Peaches were quite as good as those shown in the open classes. Mr. E. A. Rawlence, Newlands, Salisbury; Mr. Turnbull, Salisbury; and Mr. Lovibond were also successful exhibitors of fruit in these classes.

VEGETABLES.

Open.—There is only one class provided in the schedule for gentlemen's gardeners—namely, a collection of twelve kinds, and generally four noted exhibitors of vegetables enter into the contest for the three prizes given in this class by the Earl of Pembroke. This year Mr. Haines of Coleshill House Gardens, Highworth, did not put in an appearance, thus leaving the contest between Mr. T. Wilkins, gardener to Lady Theodore Guest, Inwood House, Henstridge, Mr. Inglefield, and Mr. Pope, gardener to the Earl of Carnarvon, Highclere Castle, Newbury, who took the prizes in the order in which their names appear, all showing first-rate produce neatly set up and fringed with curled Parsley. But the contest between Mr. Wilkins and Mr. Inglefield was a very close one. The former staged grand white Celery, Sutton's Satisfaction Potato, large, clean, and even; extra fine Ailsa Craig Onions, good Autumn Giant Cauliflowers, very fine Lyon Leeks, New Intermediate Carrot, Perfection Beet, Veitch's Prodigy Peas, Sutton's Perfection Tomatoes, Chelsea White Beans, Globe Artichoke, &c. Mr. Inglefield's best dishes were Autumn Giant Cauliflowers, large, close and white, New Intermediate Carrot, Ne Plus Ultra Potato, and Ailsa Craig Onions.

CUT FLOWERS.

Open.—These classes were well contested. With twenty-four Roses, single trusses, distinct, Mr. A. Pomeroy, gardener to Dr. Seaton, Bitterne, Hants, was first for a fairly good lot of blooms. With twelve Roses, distinct varieties, Mr. Neville was a good first, Mr. Browning second, and Mr. Smith third; all showing well. Mr. Budd was first for eighteen bunches of flowers, distinct, and Mr. Iggulden was a good first for twelve bunches; his stand included blooms of *Cattleya Gaskelliana*, *Cattleya crispa*, and *Ixora Williamsi*; Mr. Browning being second. With a dressed flower stand for dinner table decoration (prizes given by Mr. E. Hulse, M.P.) Mr. Cypher was a good first, employing choice flowers with his usual good taste in the arrangement; Miss J. L. Smith, Winchester, and Miss Flight, Twyford, Winchester, taking second and third in that order for good arrangements.

Ladies' Classes.—Miss Agnes Flight was first with a vase for the decoration of a dinner table with a very good and informal arrangement, Miss C. Brown being a very good second; so good, indeed, that the three Judges engaged in making the awards in these and the principal plant classes obtained the opinions of two medical and clerical gentlemen interested in such matters who were close by at the time; Miss Lovibond being a very good third. For a dressed basket for decoration of drawing room Miss M. E. Brown won the challenge trophy, value £3 3s., with a very good arrangement, Miss Agnes Flight and Miss Lovibond taking second and third prizes also for good arrangements. With six buttonholes Miss Flight and Miss M. E. Brown were equal first, and

Miss E. Burt, Winterbourne Dauney, Salisbury, was third. For three ladies' shoulder sprays the prizes went to Miss Flight, Miss E. Burt, and Miss C. Brown.

Non-competing Exhibits.—Messrs. Keynes, Williams & Co. of the Castle Street Nurseries, Salisbury, made a grand display of Roses and Dahlias, including all the best and newest varieties, in fine condition, and being set up to the best advantage they commanded great attention from visitors; as also did the fine assortment of flowering herbaceous plants, Gladiolus, Carnations, Begonias, &c., staged and admirably arranged by Messrs. Robert Veitch & Son of Exeter. Mr. B. Latham of the Shirley Nursery, Southampton, also showed a good stand of herbaceous plants in flower. Mr. A. G. Bedford of Harnham, Salisbury, contributed a group of miscellaneous plants arranged with taste.

SHROPSHIRE.—AUGUST 20TH AND 21ST.

FINE weather favoured the annual Show of this Society, now fifteen years old, and we are pleased to see that it is still growing in favour with the public, nearly 20,000 attending on the first day and 45,000 the second, this being the greatest number of any year since the opening. It was the finest Exhibition ever seen in Shrewsbury, judged from a horticultural point of view, and with regard to the exhibits in all the principal classes. The tents in extent and situation were much as usual, but the interior arrangements of several were different and improvements were evident. Each section had its special admirers. Plants were crowded into the largest tent, where the prizes of £25, £20, and £15 for twenty stove and greenhouse plants brought some of the finest specimens ever seen in the Midlands. Mr. Cypher admitted before the judging took place that he was "beaten," and ultimately accepted his position with that good grace only found as a rule with those who are experienced in exhibiting. Mr. Cypher has shown better at Shrewsbury, but the plants would have to have been remarkably good indeed to excel the huge, grandly furnished, superbly flowered specimens from Mr. Finch of Coventry. Mr. Farrant, gardener to Mrs. Judson, Shrewsbury, is an old exhibitor at this Show, and his securing the £10 for nine stove and greenhouse plants as well as the £4 for six plants in the next class as the first prizes gave general satisfaction. The Ferns that secured Mr. Lambert the first prizes in all the classes were the best examples yet staged at Shrewsbury, and the attractions of the large tent were further augmented by the great variety of fine *Dracænas*, *Caladiums*, *Coleuses*, *Begonias*, and *Pelargoniums* arranged round its margins.

Fruit made an extensive and admirable display. Grapes were a magnificent feature, and all classes were well filled. The collections of fruit, twelve dishes, brought Mr. Dawes of Temple Newsam, Leeds, into the front rank, the whole of his exhibits in the first prize collection being remarkably good, particularly the Queen Pine Apple, and Mr. Goodacre was a very close second. In the collection of nine dishes Mr. Lambert staged the first prize collection, which were most creditable. The £10 offered as a first prize for six bunches of Grapes invariably brings some of the best Grapes in the country to the fore, and this may justly be said of the majority of the bunches shown on this occasion, Mr. Goodacre being first with, amongst others, some marvellous clusters of Muscat Hamburgh. Mr. Haynes, Rockferry, the Hon. C. H. Wynn, Corwen, Mr. Daws, and Mr. James Watson were the other prizetakers in this important class. The Rev. T. M. Bulkeley-Owen, Tedsmore Hall, Mr. R. Pilkington, Mr. Blair, Trentham, and Mr. Lambert were amongst the leading prizetakers in Grapes, the latter staging Muscat of Alexandria in unusually fine condition. Peaches, Nectarines, Apricots, and Plums were staged in quantities, and although some of the dishes were composed of inferior fruits, the prize ones were of the highest merit, especially those competing for the prizes offered by Messrs. Wood & Son, Wood Green, London.

Vegetables have been more numerous but rarely better. Mr. Wilkins of Blandford had the distinction of beating Mr. Lambert for twelve dishes, his Ailsa Craig Onion and other samples being particularly good. The contest between these two exhibitors was very keen last year, and Mr. Wilkins may be congratulated on his good feeling on renewing the fight and its results. Mr. Lambert held his old position in the six dish contest, but the most extensive collections were those shown for the many handsome prizes offered by Messrs. Webb and Sons of Wordsley. Here Mr. Waite, Glenhurst, came first, Mr. Lambert second, Mr. Wilkins third, Mr. Austin fourth, and many good collections were left out. Although the Potato disease is so disastrous in many parts of the country no one could have thought so to judge by the fine collections shown here, Mr. Lambert being first and second for six dishes, and also first for three dishes. Tomatoes were deficient in size, and the Onion classes were destitute of the huge specimens so conspicuous in the collections. Only one dish of Runner Beans was staged, but the class contained several dozen dishes of Dwarf Beans, the majority being Canadian Wonder.

As usual the cottagers made a display of plants, flowers, fruit, and vegetables that would be regarded as a wonderful horticultural show in itself in many parts.

In special exhibits the local nurserymen are not now the only ones who contribute to the Shrewsbury Show. Messrs. B. S. Williams & Son, Holloway, London, staged a fine lot of Orchids and stove and greenhouse plants; Messrs. Dicksons (Limited), Chester, had an attractive table; Messrs. Birkenhead a rare collection of Ferns; Messrs. Pritchard and Sons most showy plants, cut flowers, &c.; Messrs. Jones & Sons were excellent in this respect, while Mr. Murrell had a splendid group of Tuberous Begonias in pots, cut Roses, &c.; Messrs. Laing and

Mather, Kelso, showed extensive stands of Carnations and Picotees; Mr. Lister, Rothesay, a fine lot of Pansies; Messrs. Webb a splendid show of their specialities in vegetables; Messrs. Laing & Sons, Forest Hill, Begonias; Messrs. Cannell & Sons, Swanley, Zonal Pelargoniums; Mr. Davies, Yeovil, a wonderful display of cut Tuberous Begonias; Messrs. Richard Smith & Co., Worcester, a fine group of plants and hardy cut flowers. Mr. Eekford exhibited various kinds of Sweet Peas, some of the new kinds being exceedingly pretty, as were the cut Roses from the English Fruit and Rose Company, Hereford. Much interest was also shown in the collection of Kentish fruits exhibited by Messrs. Bunyard and Co., Maidstone. The Committee awarded Messrs. Williams, Pritchard, Jones, and Birkenhead silver medals for their exhibits; and bronze medals and certificates were given to others, which is undoubtedly a step in the right direction, as these collections are highly instructive, and contain many useful specimens not found in ordinary classes. Messrs. James Carter & Co. secured a first-class certificate for their new Tomato Blenheim Orange, a yellow kind suffused with crimson, of exquisite flavour.

The decorative department confined to cut flowers was hardly equal in quality to some former years, many of the exhibits bearing traces of having been exposed to ungenial weather.

The following is a list of the prizewinners in the principal classes.

PLANTS.

The chief plant exhibits were arranged in the centre of a large tent with side tables for smaller stuff, such as table plants, &c. In the large class for twenty stove and greenhouse plants, foliage and flowering, there were three competitors, honours falling to Mr. Finch, gardener to J. Marriott, Esq., Coventry; J. Cypher, Cheltenham; and J. F. Mould, Pewsey, in the order named. Whilst all three were good there could be no difficulty in deciding their respective merits, the first being a fresh, even, and valuable exhibit. Mr. Cypher's foliage was also very bright and clean, and neither need fear the disgrace of being second to the other. Mr. Roberts, late of Highfield, Leek, is missed in this class, but it is to be hoped he may soon find it convenient to enter the lists again. For nine stove and greenhouse plants Mrs. Judson, Shrewsbury (Mr. Farrant, gardener), was first, and Mr. Flack, gardener to J. H. Gartside, Esq., Cholmondeley, second. Six stove and greenhouse plants, open to Salop, Mr. Farrant took first and third; Mr. Pearson, gardener to Lord Berwick, Attingham Hall, was second. Exotic Ferns.—Mr. Lambert, gardener to Col. Wingfield, with beautiful specimens, took first for six exotic Ferns, and for six ditto, open to Salop, also took first, Messrs. Farrant and Pearson following for second and third respectively.

For six plants in flower (Orchids included), a good competition resulted in Mr. Finch taking first, J. Cypher second, and J. F. Mould third. Mr. Cypher had his own way for six Palms in variety, and Mr. Lambert carried off first and second for *Dracænas*, Mr. McRae, gardener to T. F. Kinnersley, Esq., Leighton Hall, taking third.

Six *Caladiums*.—Mr. Farrant took off first and second prizes for excellent plants. Mr. A. Myers, Shrewsbury, Dr. Burd, Shrewsbury (Mr. Bayliss, gardener), and Mrs. Wace, Shrewsbury (Mr. Walford, gardener), in the order named were successful for four *Coleus*; and for four *Fuchsias*, Mr. Philips, gardener to W. H. Herbert, Esq., Shrewsbury, Mr. Bayliss, and Mr. Rogers, gardener to W. J. Wyley, Esq., were first, second, and third respectively, with fresh, well flowered, but not very large plants.

For six Begonias, H. Owen, The Cedars, was first, A. Myers second, and Rev. H. Charter (Mr. R. Oakley, gardener) third; Mrs. Lawrence Bird taking first for six double Geraniums, A. Myers and H. Owen second and third. Twelve table plants.—For these Mr. Lambert was well first, Mr. Farrant taking away second and third. An interesting class for fifty miscellaneous plants resulted in the Hon. W. H. Herbert securing first, R. Cowell, gardener to R. B. Philips, Esq., Hanwood, being second; whilst for collection of twenty-five ditto, Mrs. Wace, H. Owen, and Dr. Burd took the prizes in the order given. The group of plants arranged for effect, hitherto an interesting feature, was this year conspicuous by its absence, but among so many meritorious exhibits and well filled tents it could hardly be missed. The amateurs' plant classes, not enumerated here, were all well represented, as were also the plant, flower, and vegetable classes of the cottagers. These form an important feature of the Show.

CUT FLOWERS.

Twenty-four cut Roses.—Messrs. Perkins & Sons, Coventry, first and second; Messrs. Dicksons, Limited, Chester, third. For eighteen ditto Messrs. Heath & Son, Cheltenham, were first, and Mr. J. Davis, Leominster, second; Mr. A. Williams, Shrewsbury, being first for six in amateurs' class. Dahlias.—For thirty-six Messrs. W. Heath & Son were first, and Mr. W. Shaw, Kidderminster, second. Messrs. W. Heath and Son were also first for twenty-four, Mr. J. Davis coming second, and Mr. T. Diggory, Threopwood, third. For nine blooms in the amateurs' class Mr. A. Lowe, Dorrington Wood, was first; Mr. David Askin, Oswestry, second; and Rev. H. E. Carter third. Single Dahlias.—Rev. T. M. B. Owen was first for twelve, and Mr. W. Shaw second. Gladioli.—Mr. Shaw also stood first and second for eighteen; Messrs. Yarde & Co. Northampton, being third. For six, Mr. G. F. Fox, Shrewsbury, first, and Mr. A. Lowe second and third. Asters.—Messrs. J. Davies and A. Myers took honours in the chief class for twenty-four blooms, and for the rainy season that we have had were very good, indeed the same may be said of the other outdoor flowers in the various classes. The stands of twelve bunches cut flowers were

really good, Mr. Blair standing first, and Mr. Shaw and Mr. Pearson getting second and third places. For six bunches Mr. Farrant was second. Hardy herbaceous flowers.—Rev. T. M. B. Owen, with two magnificent stands, took first and second for twelve bunches, and for six Messrs. Wace and G. Burr took first and second. Carnations.—For twelve W. Adams and A. W. Warby, and for twelve Picotees Messrs. Sydenham (Birmingham) and Helliwell (Tadmorden) stood in the above relative positions; whilst in class for twelve Carnations or Picotees the two last named were successful. Marigolds, French and African.—Messrs. Fletcher, Shifnal; and Lowe, Dorrington, were first and second for each; and for Fancy Pansies Messrs. H. Pattison, A. Myers, and Mrs. Fowler took the honours. Mr. A. Myers was first and second for Zonal Pelargoniums, twelve trusses; and for doubles ditto Messrs. W. Shaw first, and A. Myers second and third.

Ball or Hand Bouquet.—Mr. Blair, Trentham, was first, and Messrs. Jones & Son, Shrewsbury, had a special prize. Messrs. Jones and Son were awarded special first for bridal bouquet, and took all honours for three buttonhole bouquets, coming in first and second for stand of cut flowers for table decoration; Mr. F. C. Arkwright being third. Mr. T. Mcares was first in amateur class for ball bouquet; Dr. Burd second. Three buttonhole bouquets, Hon. W. Herbert and Miss Wigan being first and second. Mrs. Thomas and Hon. W. Herbert first and second for stand of cut flowers. At the end of the centre table in this tent Messrs. Jones & Son had arranged a floral stand most artistically, and were deservedly awarded the Society's silver medal.

FRUIT.

In the various fruit classes the competition was most keen, as can be gathered from the fact that upwards of 300 bunches of Grapes were staged. The quality was also most excellent. Black Grapes were particularly good and well coloured; this, however, could not be said of Muscats and other white Grapes generally, the season has been more unfavourable to them than the black. Mr. Dawes, gardener to the Hon. Mrs. Ingram, Temple Newsam, easily gained first for collection of twelve dishes; Mr. Goodacre, gardener to Earl of Harrington, second. In the collection open to Salop only, Mr. Lambert, Colonel Wingfield's gardener, was first; Mr. Pearce, gardener to S. K. Mainwaring, Esq., Oteley second; and Mr. Bramwell, gardener to H. France-Hayhurst, Esq., Wellington, third. Six bunches black, Mr. Goodacre first, a very fine exhibit, marred only by the lack of colour in Muscat Hamburg, which rarely does colour well; Mr. Barker, gardener to G. Raynes, Esq., Rockferry, came second; and Mr. Bennett, gardener to Hon. C. H. Wynn, Rûg Corwen, third. These three lots were very even and required a great deal of judging to decide between them. Mr. Dawes was fourth; and Mr. Gant, gardener to J. Watson, Esq., M.P., fifth.

Three bunches of Black Hamburgs which secured first to Rev. T. M. Bowen (Mr. Langley, gardener) were magnificent samples. Mr. Bramwell was second; Mr. J. T. Herries, Stone, third; Mr. McVinish, gardener to N. C. Curzon, Esq., Lockington Hall, Derby, fourth; Mr. Flack, gardener to J. H. Gartside, Esq., Cholmondeley Castle, and Mr. Pearce, Oteley Park, equal fifth. For three bunches any other black, Mr. Pearce, Oteley Park; Mr. Middleton, gardener to — Pilkington, Esq., St. Helens; and Mr. Barker were placed in the order named. Mr. Middleton was first for four bunches of white Grapes, closely followed by Mr. Wallis, gardener to R. Sneyd, Esq., Keele Hall; Mr. Blair, Trentham, being third. Mr. Middleton was again first for three Muscats; Mr. Wallis and Mr. McVinish taking third. Mr. Blair, Trentham, came in first for the three any other white; G. Meakin, Stafford, second. For two Hamburgs Mr. Bramwell, Mr. Langley, and Mr. Lambert took the honours in the order given.

There was good competition for two bunches of black and two of white Grapes, open to Salop only. In the former class Mr. Pearce, Oteley, stood well first, Messrs. Bremmell and Gant equal second, and G. Burr third; whilst for white, Mr. Bremmell was first, Mr. E. Broughall of Rugton second, and Mr. Pearson third. Peaches were strongly shown. A dish of Princess of Wales secured first honours for Mr. McVinish, and a very fine dish of Nectarine Peach brought second to Mr. Craven, gardener to J. G. Morris, Esq., Allerton Priory; Mr. Gilman, gardener to Earl of Shrewsbury, being third. Mr. C. Davies, Maidstone, was first for Nectarines; Mr. Gilman and Mr. J. Davies second and third respectively.

Apricots.—Mr. Pearson, Mr. Langley, Mr. McReadie, and Mr. N. E. Owen, gardener to Sir R. F. Sutton, Bart., Combermere Abbey, in the order named, divided the honours in this class; and for green or yellow Plums, Mr. C. Davies, Mr. Palmer, Thames Ditton; and Mr. Blair, Trentham, did likewise. Mr. C. Davies, Mr. Blair, and Mr. Lambert gaining the prizes for purple or red Plums.

Melons.—These were also shown in force. Special prizes were offered by enterprising firms for best exhibits of their new and favourite varieties. There does not seem, however, to be any variety that finds so much favour with the judges as does the popular Hero of Lockinge. This variety was prominent here. Mr. Craven was first for green flesh; Mr. Bennett, Rûg, second; and Mr. G. Meakin third. Mr. N. E. Owen for six dishes of hardy fruit stood first; Mr. Pearson and Mr. C. Davies second and third. Mr. Langley was first for dishes of scarlet Plums and Cherries.

VEGETABLES.

Collection of Twelve Varieties.—This class was keenly contested and the exhibits were highly meritorious. Mr. Wilkins, gardener to Lady Theodore Guest, Henstridge, came in first, followed closely by Mr. Lambert and Mr. Corfield, gardener to Capt. Cunliffe. For six varieties,

"open to the county only," Mr. Lambert and Mr. Corfield were successful, Mr. Lambert also coming in for three dishes of Potatoes, and gaining second for a single dish, Hon. P. Talbot and Miss L. Burd being first and third. Tomatoes.—Among many dishes Mr. Langley took first, Mr. W. H. Jones, Thornton, second, and J. R. Greatorex third. Mr. Waite was first with a dish of Peas, Mr. Lambert first for spring Onions and third for autumn ditto, Mr. Waite and Mr. Bremmell being first and second. Mr. Craven, with Lockie's Perfection, was ahead with a brace of Cucumbers, Mr. Bremmell and T. A. Dickin taking second and third places. Mr. Pearson first for Cauliflowers, closely followed by Mr. McVinish and Mr. Forder, gardener to Col. Cornwallis West, the latter being first for Celery and Parsnips and third for Carrots, his exhibits being clean, carefully grown examples. Mr. A. W. Darby was first for French Beans and Carrots and second for Parsnips.

SPECIAL PRIZES.

By Messrs. Webb & Son, for collection of vegetables.—Mr. Waite was placed first, Mr. Lambert second, Mr. Wilkins third, Earl of Dudley's gardener fourth, and Mr. Forder and Capt. Cunliffe dividing fifth. By Messrs. Sutton & Sons, for Melons.—Mr. Craven first, Mr. Farrant second, Mr. Pearson third, and Mr. Bennet fourth. Mr. Bramwell took the first prize for Melons, Mr. S. T. Wright, gardener to C. Lee Campbell, Esq., Glewston Court, Ross, Mr. Forder, and Mr. Holloway following. Messrs. Townsend, Arkwright, and Waite secured the Tomato prizes, and Messrs. J. Davies and Forder those for Carrots. Mr. Wright was first with a dish of Peas, Messrs. Waite and Forder succeeding in the order named. By Messrs. Carter, for dish of Beans.—Mr. Wilkins first, Mr. Waite second, Mr. Lambert third, and Mr. Forder fourth, their prizes for Tomatoes being taken by Messrs. Craven, Waite, Lambert, and Gant. Mr. Craven was first in their Melon class, Messrs. Forder, Lambert, and Gant following. By H. Deverill, for Onions, "Deverill's Varieties."—First, Mr. Wilkins; second, Mr. Waite. By Messrs. Wood & Son, dishes of Peaches and Nectarines, eight each.—First, Mr. Blair; Mr. Wallis, Mr. G. Meakin, and Mr. Goodacre succeeding in order of their names.

NEWCASTLE.

THE Durham, Northumberland, and Newcastle-on-Tyne Botanical and Horticultural Society held their autumn Exhibition on Wednesday, Thursday, and Friday last week. The weather during the last few years has been most unpropitious in the interests of the Exhibition; last year left the Committee in debt, and it was only through the income derived from a grand concert that the Committee were able to make good the deficit. This year the first day the weather was fine, but we regret to say the second and third days were unfavourable.

Speaking of the Exhibition, there was a falling off in the exhibits as regards number; especially was that the case in plants, and had not the local nurserymen come forward a good deal of vacant space would have been the result. We have commented in these columns before that we think it is a pity the Society discontinued giving prizes in their schedule for groups of plants, as they in all cases materially assist in giving a show an imposing effect. However, the defect, as already stated, was materially obviated by the large, excellent, and varied collection of plants supplied by the nurserymen. The Society has also discontinued prizes for table decorations, which were always an important feature at the autumn exhibitions. The quality of the exhibits this year was really excellent, the fruit generally being very superb, the Grapes forming a most prominent feature, and it is no exaggeration to say that they would have been hard to surpass in any exhibition in the kingdom. Mr. J. W. McHattie, gardener to the Marquis of Lothian, Dalkeith, as a new exhibitor at Newcastle, was most successful in fruit. The prize schedule for the autumn Show is £269 13s., and is divided into three divisions, viz., Open A Division, and B opened to all, and C to amateurs only.

In the A division, for eight stove and greenhouse, Mr. G. H. Letts, gardener to the Earl of Zetland, Aske Hall, Richmond, was first; he showed a fine *Phenocoma prolifera*, highly coloured, 5 to 6 feet across; and, what is now not often seen, *Dipladenia boliviensis*, very fine indeed; also *D. amabilis*, *Statice profusa*, *Allamandas grandiflora* and *nobilis*, *Ericas* *Parmentieri* and *Turnbulli*, both well flowered. Mr. Henry Johnson, gardener to J. B. Hodgkin, Esq., Elmridge, Darlington, was second with good examples of *Ericas* 4 feet through. Mr. F. Nicholas, gardener to the Earl of Zetland, Upleatham, was first for six plants, *Anthurium Andreanum*, ten flowers, 7 to 8 inches across, very striking indeed; *Clerodendron Balfourianum*, good; *Erica Austiniana* and *œmula*, profuse in bloom; *Allamanda nobilis* and *Cypripedium Laurenceanum*, with thirty flowers each, 6 to 7 inches across; this plant was much admired by everyone. Mr. Henry Johnson was second; his best plants were *Erica Eweriana superba*, and *Allamanda Schottii*. In 7-inch pots some fine *Lilium auratum* were shown with five stems, and well studded with flowers, by Mr. Thomas Bell. For four *Ericas* Mr. F. Nicholas was first with *Eweriana*, *Austiniana*, *ampullacea*, and *Irbyana*. Mr. Henry Johnson was second.

For six exotic Ferns, in Class C, Mr. Henry Johnson was first and Mr. John McIntyre, gardener to Mrs. Gurney Pease, Woodside, Darlington, second, the former showing *Microlepia hirta cristata* 10 to 12 feet across, *Dicksonia antarctica*, *Davallia Mooreana*, and *Adiantum cuneatum Veitchii*; and in the Class A Mr. McIntyre was first with *Microlepia hirta cristata*, *Lygodium scandens*, *Gleichenia rupestris*, *Dicksonia antarctica*, *Davallia fijiensis plumosa*, and *D. Mooreana*, 6 to 7 inches across, *Gleichenia rupestris*, and a fine plant of *Lomaria zamiaefolia*. For eight foliage plants Mr. G. H. Letts was first with well grown

plants of *Cycas circinalis*, *Cordyline indivisa*, *Cycas revoluta*, *Kentia Fosteriana*, *Chamaerops excelsa*, *Encephalartos villosus*, and two splendid coloured *Crotons* *Johannis* and *Montfortiensis*. Mr. McIntyre was second with *Crotons intermedia*, *angustifolia*, *aigburchiensis*, *Phoenix rupicola*, *Cycas revoluta*, &c.

For twenty-four Dahlias, distinct, the name of the first prize winner was omitted, but the blooms were good examples of Geo. Barnes, Vice President, Mr. Rawlings, Goldfinder, Crimson King, Mr. Glasscock, Royalty, Nellie Cramond, R. J. Rawlings, Harry Keith, Mrs. Gladstone (the latter a fine formed light flower), Thomas Hobbs, Royal Queen, Major Clarke, Cardinal, J. G. West, W. Rawlings. Mr. N. Walker, Low Fell, was second, and his blooms included J. M. Keynes, James Vick, Shirley Hibberd, Mr. Gladstone, Mrs. Langtry (a very fine flower). Four collections were exhibited, and they formed a striking feature in the Exhibition; some coarse flowers were staged, but generally the blooms were good, and an improvement on former years. For twelve Dahlias, fancies, Mr. Geo. Humphries, Kington Langley, Chippenham, was first. There were seven lots staged. In the first were John Lamont (crimson, very fine), John Cooper, Plutarch, Major Bartlett, J. B. Camm, Henry Eckford, Mr. Sanders, Duchess of Albany, and Gaity. Mr. M. Campbell was second with unnamed flowers, but rather coarse. Mr. Humphries was also first for twelve bunches of Pompon Dahlias, which were effectively and neatly staged with buds and foliage, and received a good deal of attention from the visitors. They included such varieties as Little Duchess, Dora, Eurydice, Darkness, Lælia, Mabel, Favourite, Grace, and E. F. Juncker. Twelve bunches of single Dahlias by Mr. Harkness were good, and received the premier award of the Judges, but were unnamed.

For twenty-four Hollyhocks, not less than twelve varieties, Mr. Adam Rogerson, North Middleton, was first, the best flowers being Earl of Dalkeith, six blooms of Peri, a fine white variety; Venus, rose coloured; La Grande, Lord Decies, Grace Darling, and Maggie Bohm. These flowers were grand, and show that the future of the Hollyhock will not be lost sight of. Rumour has it there is now a simple well known specific to which the Hollyhock disease succumbs, which is soon to be made public. However, south of Newcastle it would have been difficult to have found Hollyhock flowers anything like so fine as those referred to. There were four collections of twenty-four staged. Mr. Richard Mann, School House, Shadwell Lane, Leeds, was second.

Gladioli were also exceptionally well shown, and Mr. A. G. Brown, Whitburn, was well and justly placed first; Mr. R. Walker, Low Fell, Gateshead, second; and Messrs. Harkness & Sons third. In the first stand were splendid spikes, quite fresh, and each flower very large. The best blooms were Mr. Davison, white tipped with violet and purple centre; Dr. Beatty, scarlet, and best of its type; Electra, white to rose, and flushed with pencilled crimson; Orpheus, a blush; also some fine spikes of Shakespeare. Mr. H. Walker was second, and his stand contained similar flowers to the above. For six Roses Messrs. Harkness and Sons, Bedale, were first with very good blooms indeed. The best shown were Mrs. John Laing, Marshall Wilder, Exposition de Brie, Madame Eugène Verdier, Etienne Levet, Ulrich Brunner, Duchesse de Caylus, Reynolds Hole.

For eighteen bunches of herbaceous plants or border flowers as described in the schedule, there were four stands, and as showing the growing popularity of these flowers they evoked as much interest, if not more, than any of the exhibits in the Show. The first collection of Mr. John Short was unquestionably well staged, indeed this went far to secure him premier honours. Phlox Richard Wallace was grand, and Delight likewise good; *Coreopsis Drummondii*, *Lilium tenuifolium roseum*, *Montbretia crassifolia*, *Chrysanthemum maximum*, *Bocconia cordata*, *Lilium auratum*, *Achillea ægyptiaca*, *Gladiolus La Frelle*, *Hyacinthus candicans*, *Statice latifolia*, *Gladiolus brenchleyensis*, *Eryngium Oliverianum*, *Lilium Harrisii*, *Helenium pumilum*, *Helianthus multiflorus major*, *Carnation Constellation*, and a seedling. Messrs. Harkness & Sons were second, but they lacked that careful staging hitherto generally shown by this firm, but in quality the flowers were unquestionably good, and included fine large bunches of *Pyrethrum Vivid*, *Carnation Germania* (the latter a charming sulphur yellow variety), *Phlox D. Syme*, *Gladioli* (Lemoine section), *Harpalum rigidum*, *Scabiosa caucasica*, *Echinops*, *Pyrethrum Mont Blanc* (very fine), and *Pyrethrum maximum*. Mr. Thomas Battensby, Hagg Hill, Blaydon, was third with also a very fine collection; in fact, every collection was of superior merit.

Asters, Globe, in twenty-fours, were represented by seven lots. Messrs. Henry Clark & Son were first, and for feathered Asters, also seven lots, Mr. A. G. Brown, Whitburn, was first. For twelve Carnations, not less than six varieties, Mr. Geo. Dixon was first, as well as for Picotees. Pansies, Show and Fancy, were also equally well shown. For twelve bunches of stove or greenhouse flowers the competition was excellent. Mr. G. H. Letts was first with large bunches of *Dipladenia amabilis*, *Anthurium Andreanum*, *Saccolabium major*, *Disa grandiflora*, *Shubertia grandiflora*, and *Stephanotis grandiflora*. Mr. Henry Johnson was second. For six bunches of cut flowers, Mr. J. McIndoe, Hutton Hall was first, *Stephanotis floribunda*, *Disa grandiflora*, *Erica insignis* and *Cypripedium Warreni* being well represented.

Table plants were shown in great numbers. Mr. Henry Johnson was first amongst five exhibitors of excellent specimens. Table decorations were also excellent, and occupied a large area of space. Mr. Joseph Punton, gardener to Thos. Hodgkin, Esq., Benwell Dene, was first for a drawing-room cpergue, which was very effectively and

neatly arranged, and included *Ixoras*, *Gladioli* The Bride, *Oncidium flexuosum*, and *Cattleyas*, well draped with choice Ferns. For a basket of cut flowers Mrs. Oliphant, 36, Green Market, Newcastle, was first with charming blooms of *Disa grandiflora* worked over the top of the basket. For a bridal bouquet Mr. Oliphant was also first with the usual white flowers employed on these occasions. Mr. J. R. Chard, Brunswick Nurseries, Newington, London, was first for a hand bouquet, in which *Caladium argyrites* was effectively used amongst some choice Orchids. Mr. John Jennings was second. For ladies sprays or coiffeurs there were eleven entries, Miss F. Handyside, Newcastle, being first. For a gentleman's buttonhole twenty examples were staged. Mr. John Battensby was first with a pip of *Francoa ramosa*, *Odontoglossum Cervantesi*, *Jasminum officinale*, *Bouvardia*, and a leaf of *Ampelopsis Veitchii* against a background of *Adiantum gracillimum*. In the corresponding class Mrs. E. Adams was first, and Mr. Oliphant again first for a basket of cut flowers. Mr. Jennings was first for bridal bouquet, and for a hand bouquet Mr. Isaac Lawson was first.

FRUIT.

In this lay the strength of the Exhibition. Grapes were particularly well shown, the collections in every case being very fine indeed. Mr. J. McIndoe was first with twelve dishes. Duke of Buccleuch and Black Hamburg Grapes were very superior, averaging from 3 lbs. to 4 lbs. each. Violet Hâtive Nectarines, Souvenir de Congrès Pears, Brown Turkey Fig, Best of All Melon, Bigarreau Napoleon Cherries, Apricots were all good. Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Gardens, Derby, was second, staging Gros Maroc and Muscat of Alexandria Grapes, the latter scarcely ripe, Smooth Cayenne Pine, Lord Napier Nectarine, Barrington Peaches, &c. Mr. J. Hunter, Lambton Castle, was third, his collection including good examples of Canon Hall and Gros Maroc Grapes, Louise Bonne de Jersey Pears, and Irish Peach Apples.

For a collection of eight dishes Mr. J. Hunter was first with fine bunches of Canon Hall and Gros Maroc Grapes, and Early Grosse Mignonne Peaches, Louise Bonne de Jersey and Magnum Bonum Plums were very good. Mr. J. McIndoe was second, with Duke of Buccleuch Grapes and Black Hamburg and Scarlet Premier Melon, fine. Mr. John McIntyre was third. For six dishes of fruit, Pines excluded, Mr. Thos. Cowperthwaite, gardener to John Hutton, Esq., Castle Eden, was first, exhibiting finely finished bunches of Black Hamburgs, Brown Turkey Figs, Peaches and Nectarines. Mr. Richard Westcott, Raby Castle, was second. For six dishes of hardy fruit Mr. W. J. Short was first, Mr. James Tullett second, and Mr. Richard Westcott third. For six bunches of Grapes, not less than three varieties, Mr. J. W. McHattie, gardener to the Marquis of Lothian, Newbattle Abbey, East Lothian, was placed first, which award he well deserved, for well finished bunches of Madresfield Court, well coloured Muscat of Alexandria, Black Hamburgs, averaging 3 to 4 lbs. each, and all equal in size and shape. This was an unusually fine exhibit. Mr. John Potter was second with Black Alicante, Muscat of Alexandria, and Gros Colman. The same exhibitor was also first for two bunches of Black Hamburgs, amongst seven lots staged. For two bunches of Black Alicante Mr. Potter was first, and Mr. J. H. McHattie was first for two bunches of black Grapes, any other sort, with Lady Downe's, and he was again first for two bunches Muscat of Alexandria, well grown and finished and perfectly ripe. In white Grapes, any sort, Mr. Hunter was first with Duke of Buccleuch. For two Apples Mr. R. Nicholas was first with Smooth-leaved Cayenne, 7 to 8 lbs. weight. Thirteen dishes of Peaches were staged, but were unnamed, Mr. Thomas Taylor being first. For Nectarines, amongst eight dishes, Mr. J. H. Goodacre was first.

For Apples, dessert, Mr. J. McIndoe was first with Lady Sudeley, Duchess of Oldenburg, Worcester Pearmain, and Ribston Pippin. For baking Apples Mr. McIndoe was also first, including Alexander McIndoe's Russet (a fine new variety, twice the size of the ordinary variety), Ecklinville Seedling, and Warner's King. There were five lots staged, all highly commendable. For Pears Mr. J. Hunter was first, Louise Bonne de Jersey, Bellissime d'Hiver, Victoria, and Beurré de l'Assomption being very fine; and Mr. J. McIndoe second.

All the local nurserymen sent stands of plants not for competition, Messrs. Wm. Fell & Co., Hexham, sending a fine stand of Coniferæ and herbaceous flowers; Messrs. Little & Ballantyne, Carlisle, a mixed collection, including some handsome new *Crotons*; Mr. Jos. Watson, nurseryman, Fenham, Newcastle, a fine mixed stand of plants, including *Clematis* Miss Bateman; all the above received certificates of commendation from the Society. Mr. J. Robson, Hexham, showed a new climbing Rose, Gloire de Margottin, Coniferæ, and herbaceous plants; Mr. J. W. Tate, 1, Crow's Nest Lane, a fine lot of table plants; Kent & Brydon, Darlington, stove and table plants; Messrs. Stuart and Mein, Kelso, Carnations; Messrs. Dobbie & Sons, Rothsay, Pansies shown in stands. Mr. John Forbes, Buccleuch Nurseries, Hawick, showed three new *Colcuses*, Lady Elgin, mixture of maroon, green, and yellow; Buccleuch Beauty, lemon yellow, spotted green; Wm. Stanley, groundwork red, and some fine *Pentstemons*, Mr. Gladstone being fine, closely set, and thick in the spike.

After the judging was over the Committee and officers lunched together, the President, John Cowen, Esq., Blaydon, in the chair. He was also supported by Councillor Baxter Ellis, the Chairman of the Society, the Mayor of Newcastle, and several Councillors. The health of the Society was drunk most enthusiastically, and the staging Committee and the Secretary, Mr. J. J. Gillespie, were thanked for their services so ably rendered to the Society.

DEVON AND EXETER.—AUGUST 22ND.

THIS Society held its annual Exhibition of plants, fruits, flowers, and vegetables on Northernhay, Exeter, on the above date. Northernhay is a public garden, occupying an elevated position within a few hundred yards of the Queen Street Station of the London and South-Western Railway, and is in every way a very suitable place for the holding of the summer annual Show. Fortunately on this occasion the weather was everything that the indefatigable Hon. Secretary (Mr. G. D. Cann) and the Committee could wish, with the result that the Show was one of the best in every respect that the Society has had for a long time.

PLANTS.

In the twenty-five classes provided in the Society's schedule for plants the absence of Mr. Lock's exhibits was, as at Southampton, Taunton, and Salisbury, during the shows held in those important horticultural centres within the last three weeks, very noticeable in the general display. With nine stove and greenhouse plants and flowers, distinct, Mr. W. Rowland, gardener to W. Brock, Esq., was first. His plants of *Clerodendron Balfourianum* and *Stephanotis floribunda* were fine specimens of good culture. *Allamandas nobilis* and *Hendersoni*, *Ixora Williamsi*, *Dipladenias amabilis* and *Brearleyana* were also good. Mr. Curry, gardener to Colonel Pepper, Milford Hall, Salisbury, was second with good plants. In the corresponding class for a like number of stove and greenhouse foliage plants the same exhibitors occupied the same positions as in the preceding class. Mr. Rowland's Palms were large and good, but his Crotons were rather deficient in colour. He staged *Dicksonia squarrosa*; *Crotons Disraeli*, *Johannis*, and *Andreanus*; *Latania borbonica*, *Kentia Belmoreana*, *Dicksonia antarctica*, and *Anthurium Warocqueanum*. With nine stove and greenhouse Ferns Mr. Ebbot, gardener to the Rev. Hamilton-Gell, Winslade, Exeter, was placed first for very good plants of medium size, and very fresh. The best of these were *Microlepia hirta cristata* and *Goniophlebium subauriculatum*, Mr. Rowland being second. The last-named exhibitor was first in the following classes:—Six *Dracenas*, six *Fuchsias*, three *Liliums*. Mr. Ebbot was first for six *Caladiums*, staging, like Mr. Rowland in the foregoing classes, very creditably grown plants. Mr. W. C. Sim was first for six tuberous-rooted *Begonias* and for six *Cockscombs*, showing good plants in each case. Mr. T. Knapman was first for six *Zonal Pelargoniums* with well grown plants, being also first for a like number of double-flowered *Pelargoniums*. For a group of miscellaneous plants arranged for effect in an oval with a diameter of 12 feet by 16 feet, Mr. Rowland was awarded a silver cup, value £5, for a very good arrangement of suitable plants, Mr. Curry being a good second, and Mr. W. C. Sim third. In the class reducing the diameter to 12 feet by 8 feet Colonel Garrett was first and Mr. Knapman second, both exhibitors arranging very good groups.

CUT FLOWERS.

The seventeen classes devoted to cut flowers were well contested, the exhibits in most cases being very meritorious. With twenty-four Show and Fancy Dahlias, distinct varieties, Mr. S. Cooper was first, and Mr. Nation second, both showing stands of even fresh blooms of leading varieties. With twelve blooms of the same description of this still popular flower, the same exhibitors occupied a like position, but in the class for twelve Cactus and decorative varieties, distinct, their positions were reversed, Mr. Nation taking first place and Mr. Cooper second. With six varieties of the Dahlia Mr. Knapman was first and Mr. Cooper second, the last named exhibitor taking first for six bunches of Pompons arranged with foliage. Mr. W. H. Fowler, Taunton, had the best twelve spikes of *Gladioli*, distinct, with a very good stand, Sir W. Lethbridge being second. Mr. Fowler was first for twelve Roses, showing fresh even blooms. Mr. Nation, Mrs. Hart, and Mr. Cooper were successful exhibitors of *Asters*, staging good blooms. Mr. Kneel had the best stand of twelve *Hollyhocks*, and the Rev. J. L. Gibbs the second best. Mr. Fowler was first for a very good stand of twelve *Carnations*. Messrs. Hamilton-Gell, Richards, Knapman, Cooper, and Mr. Macalister were also successful exhibitors in minor classes.

FRUIT.

This was well shown throughout all the twenty-four classes provided for it. There were several good collections of ten kinds staged in competition for the silver cup, value £5 5s, given as a first prize by those generous supporters of horticulture, Messrs. Robert Veitch & Son. Mr. H. W. Ward, gardener to the Earl of Radnor, Longford Castle, Salisbury, was first with good fruit, consisting of medium-sized Queen Pine, Muscat of Alexandria and Madresfield Court Grapes, Blenheim Orange Melon; Sea Eagle Peaches, large, even, well-coloured fruits; large Brunswick Figs, Moor Park Apricots, Pine Apple Nectarines, Green Gage Plums, and Red Astrachan Apples. Mr. J. Lloyd, gardener to V. Stuckley, Esq., Langport, was a good second, his best being a fine Smooth Cayenne Pine Apple, Pine Apple Nectarines, Muscat of Alexandria and Madresfield Court Grapes, and a hybrid Melon. Mr. Iggulden, gardener to the Earl of Cork, Marston, Frome, was third. In the class for six kinds of fruit (Pine excluded) Mr. Mairs, gardener to Sir John Shelley, Bart., was first with even and fairly well coloured bunches of Gros Maroc, Barrington Peaches, Blenheim Orange Melon, Pine Apple Nectarines, Moor Park Apricots, and Kirk's Plums, a good even lot of fruit. Sir W. H. Walrond's gardener was a good second, showing in his collection grand bunches of Alnwick Seedling Grapes. Mr. Bull, gardener to Sir R. Buller, Downes,

Crediton, had the best Pine Apple, and Colonel Garrett the second best. Mr. Iggulden was first for three bunches of Black Hamburg Grapes, his bunches being well coloured, but lacking freshness; Mr. Lloyd was a good second. Mr. McMillan, gardener to Sir G. Stuckley, was first for Muscat of Alexandria, staging good-sized well-coloured bunches; Mr. Lloyd taking second place with good exhibits. Mr. Iggulden was first for Madresfield Court with bunches of medium size and good colour, Mr. Lloyd being a good second. With three bunches of Black Alicante, Mr. Copp, gardener to W. E. S. Erle Drax, Esq., Holnest House, Dorchester, was first, staging medium-sized, well-coloured bunches, carrying a grand bloom, Lord Poltimore's gardener being second; Mr. H. W. Ward being first for Foster's Seedling, staging large well-coloured bunches, Mr. Iggulden being second. Mr. Luttrell's gardener (Dunster Castle) was first for Buckland Sweetwater, having large well coloured bunches. Mr. Benmore was second with nice bunches. The best dish of Peaches came from Dunster Castle, Royal George; Mr. H. W. Ward being a very close second, with large, even, and finely coloured fruits of Bellegarde.

Mr. Lloyd was first for Nectarines, showing fine Pine Apple, and Mr. Ebbot was a good second. Mr. Iggulden had the best flavoured Melon with Countess, Mr. H. W. Ward being second with Hero of Lockinge. Lord Poltimore's gardener had the best flavoured scarlet-flesh Melon with Blenheim Orange, the Rev. Sub-Dean Acland being second. Col. Garrett and Mr. Luttrell were first and second respectively for Apricots, showing good sized even bright fruits. Mr. H. W. Ward had the best dish yellow or green Plums, staging large ripe fruits of Guthrie's Late Gage, Mr. Iggulden being second. The last named exhibitor was first for a dish of dessert Apples, with Beauty of Bath in good condition; and Miss Fripp had the best dish of culinary with Lord Suffield. Lord Poltimore's gardener had the best dish of red or purple Plums, showing fruits of Kirk's. He also had the best dish of Pears in Jargonelle. Mr. H. W. Ward was first for White Currants and for Gooseberries, showing good fruits in both cases. Sir John Walrond's gardener had the best dish of Cherries, Mr. Mairs, gardener to Sir J. Shelley, being second.

VEGETABLES.

The twenty-five classes provided for these were well filled, the chief point of interest being centred in the collections of twelve kinds. Mr. Copp was first, showing grand Autumn Giant Cauliflowers, Sutton's New Intermediate Carrot, good specimens of Wright's Celery, and Ellcombe's Improved Parsnips; clean solid Lyon Leeks, Veitch's Main Crop Onion, Tomato Perfection, Ne Plus Ultra Bean, Sutton's Seedling Potato, Duke of Albany Pea, &c. Mr. Mairs was second, his best dishes being Autumn Giant Cauliflowers, New Intermediate Carrot, and Perfection Tomato. Rev. Sub-Dean Acland was third, and an extra prize was awarded to Mr. John Drew. Cucumbers were shown well by Mr. Luttrell, Mr. Mairs, and Lord Poltimore's gardener. Mr. Lloyd had the best twelve bulbs of autumn-sown Onions, showing Giant Rocca, large, clean, even, and firm as a deal board. Mr. Luttrell had the best dish of spring-sown Onions and Mr. Mairs the second best in a good class. Mr. Copp was first for twelve white kidney-shaped Potatoes with grand tubers of Sutton's Seedling, the Rev. Sub-Dean Acland having the best dish of coloured kidney-shaped Potatoes with Prize-taker. This gentleman was also first for twelve white round and twelve coloured round Potatoes, showing London Hero and The Dean in the respective classes in good form. Mr. Sims was first for a dish of twelve Tomatoes, showing Sutton's Perfection in fine condition.

MISCELLANEOUS EXHIBITS.

Messrs. Robert Veitch & Son had a grand bank of miscellaneous plants and cut flowers effectively arranged, and which made quite an imposing display in themselves; these included Palms, Japanese Maples, Roses, *Gloxinias*, *Gladioli*, *Carnations*, &c. Messrs. J. Crispin & Sons, Nelson Street, Bristol, showed cut blooms of Orchids—*Cattleya gigas* Sanderiana, *C. Harrisonae*, *Dendrobium Dearei*, &c. Mr. James Walters, Mount Radford Nursery, Exeter, had eight stands of very good Roses. Messrs. Robert Veitch & Son obtained a certificate for a new Shallot named Veitch's Exhibition Purple. This variety is of great size. 60 lbs. of "Early Puritan" Potato were also exhibited by this firm, which were the production of 1 lb. (three Potatoes) planted last March. This was given a special certificate.



FRUIT FORCING.

VINES.—*Early Forced Pot Vines*.—Those for starting in November must not be allowed to become dust-dry at the roots. They will be at rest, the wood ripe, the laterals closely pruned, and the canes shortened to about 6 feet, more or less, according to the situation of the eyes. Whilst the cuts are dry dress them with styptic or knotting to prevent trouble when placed in heat through bleeding. They should be kept in a cool airy house.

Earliest Forced Planted-out Vines.—It is not necessary to wait until all the leaves have fallen before pruning matured Vines for early forcing, but the wood must be brown and hard and the leaves turning yellow. The pruning will cause the Vines to go more quickly and thoroughly to rest. If in good condition they will afford bunches quite large enough when pruned to a couple of buds from the base, but if the Vines are weak from a long course of forcing or overcropping, the spur shoots may be left a little longer, with a view to larger bunches. When this method is adopted shoots should be taken from as near the base as possible in the spring, and not allowed to carry fruit, but be stopped at about the sixth leaf and the laterals at the first leaf, and subsequently as produced. Such shoots are sure to form good buds; the extra foliage will tend to invigorate and support the fruit on the other shoot, which can be cut away in due course in favour of the one for fruiting the following season. This alternate system of fruiting necessitates the shoots being kept wider apart for development and exposure to light and air. If the Vines are grown on the extension system it will only be necessary to cut back to bold buds on firm ripe wood, being guided by the space at command, for there must be no overcrowding. It is important that the house be thoroughly cleaned and the Vines also. Any weakly Vines, or those in an unsatisfactory state, may be improved by removing the soil down to the roots and substituting fresh loam, with an admixture of crushed bones, to the extent of a bushel to twenty bushels of loam; and if calcareous matter be wanted add from a sixth to a tenth of old mortar rubbish, more being required for heavy than light soil.

Lift any roots available for the purpose, laying them upon the fresh compost, and cover 3 or 4 inches deep. This is best done before the fall of the leaf. It is a mistake to allow Vines to become dry at the roots when at rest. Cracked borders through dryness detach the finer and best roots; besides, the border is difficult to bring into a thoroughly moist condition. The outside border should have a covering of some kind to protect the roots from the heavy autumn rains, which reduce the temperature considerably. Glass lights are preferable, throwing off heavy rains whilst allowing the sun's heat to penetrate the soil. Many persons, however, are obliged to rest content with a covering of leaves and litter after cold weather sets in. Though good Grapes can be produced without material to throw off the rains, yet reason and practice justify their employment wherever available, for the exclusion of moisture in undue proportion to the requirements of the Vines.

Young Vines.—Those which have made a strong growth and are late in ripening should be assisted with fire heat, maintaining a maximum of 75° and a minimum of 65° artificially, continuing it until the wood is ripe, accompanied with free top and front ventilation. Discourage any further growth by the removal of the laterals as they appear.

Late Grapes.—Many are too late. They should be assisted with fire heat, maintaining a night temperature of 70° to 75°, falling 5° to 10° during the night, increasing to 80° to 85° by day with sun, accompanied with a free circulation of air, and a little at night. It will require sharp firing to finish those that are only commencing to colour before the days are too short to admit of free ventilation; indeed, more can be done in the next four or six weeks than in twice the time later on. Those Grapes well advanced in ripening may have the atmospheric moisture reduced; those only colouring should have a moderate amount of moisture to assist their swelling, not neglecting to apply water to the inside border as may be necessary.

PINES.—Suckers from the summer fruiters will soon be ready to re-pot. It is well to divide the plants into two batches. The strongest plants should be shifted into their fruiting pots as soon as ready, employing 10 or 11-inch pots according to kind, affording the plants a position near the glass in a light airy house, keeping them gradually growing through the winter. The plants so treated will be readily started into fruit next May or June, and will afford a good supply in late summer or early autumn. The other plants, suckers from the summer fruiters not large enough to shift into fruiting pots, winter in their 7 or 8-inch pots, transferring them to the larger as soon as ready in the spring, which, with suckers of Smooth-leaved Cayenne that were started last March, will afford a successional supply of fruit through the winter months.

A re-arrangement of the plants should now be made in order to separate the fruiting from the non-fruiting, as many of those that were started from suckers of last summer's fruiters will have fruit swelling. Those plants not fruiting will have completed the growth, and should have air very freely for the next six weeks, when the temperature exceeds 80°. Plants well rooted should have a bottom heat of 80° to 85°, but recently potted plants, or those not having roots well established in the fresh compost, maintain at 90°.

Plants swelling the fruit should have moderate atmospheric moisture, admitting a little air at the top of the house early in the morning, so as to allow of any superfluous moisture escaping before the sun's rays act powerfully upon the fruit. Any fruit it is desired to retard should be moved to a rather cool or shady house, affording abundance of air.

ARALIA VEITCHI.—Small plants that have been grown in the stove up to this date, and are large enough for table decoration, should be gradually hardened and placed in a cooler structure. In brisk heat they soon run up too tall, but in a temperature of 50° they will be perfectly safe and remain of a suitable size for a long time. The same applies to

A. V. gracillima and *A. leptophylla*. Plants of the latter that are growing too tall may be cut into lengths of two or three joints, and inserted singly in small pots. The top eye should be level with the soil, so that when placed into larger pots the old portion of the young plant can be buried.

THE BEE-KEEPER.

APIARIAN NOTES.

AT THE HEATHER.

ON the 7th of August, fully a fortnight later than in 1889, we placed our bees among the Heather. Although later this year it is as fresh and profuse in blossom as it was last year, and a few fine days are all that are necessary to secure a large yield of honey. The Thyme was also beautiful, and its perfume agreeable.

HOW FAR BEES FLY.

I started at a point where I was sure they would be on fields of Thyme, and travelled westward for three and half miles where there was a break in the flora which the bees had reached, but I do not think had gone beyond it. By the time I had reached the spot the day was declining, still many bees were active upon both Thyme and Thistles, the only variety, however, being Carniolians; not another bee was seen. Half a mile nearer the hives Syrians appeared, and I had to travel a considerable distance nearer home before other varieties were traced. This is not the first time I have witnessed the Carniolians the farthest from home, and I am hopeful that they will form the heaviest hives at the end of the season. But what about their swarming propensities? The rumour that they swarm excessively is a myth arising through a misunderstanding of the nature of bees and their habits. My bees are crowding 6000 cubic inches, and they have shown no inclination whatever to swarm, and will not until the queen shows signs of exhaustion.

MOVING BEES SAFELY.

To send or take hives safely a long distance without worrying or overheating the bees is the key to success at the moors, and a great means of ensuring immunity from foul brood. Our bees had to be carted upwards of three miles and then sent nearly fifty by rail, yet not a bee escaped, nor was a dead one found, though they were confined for seventeen hours during the hottest day of the season. It will be remembered that previous to our instructions for taking bees to the Heather the late Mr. Wm. Raitt recorded the suffocation of his bees during transit of only a few miles. Profiting by our instructions he took them safely the following year, and gave the method as original, which has been reproduced in the "Bee-keepers' Record" for August, but the attentive reader will not fail to observe that there is as much need for reform in the hives as there was in the ventilation of them.

OBSERVATIONS.

We have observed little of interest to record further than that in less than five minutes after the bees were set free they were entering their hives with honey and pollen. They as usual flew low, and took circuitous routes to escape the wind. Although the day may appear to us likely to be fine, before rain the bees remain idle.

THE WEATHER.

Since the 22nd August, when we had near Leadhills a fall of snow, the weather has been very changeable—frost, high winds, with heavy rain and bright sunshine alternating. During the week honey was gathered on two days. The Heather is in splendid bloom, and with two weeks' fine weather hives which are in good condition will be sure to rise rapidly in weight. It is to be regretted, however, that many hives I have witnessed are in very poor condition, and very far below the strength they ought to be at the moors.

QUEENLESS HIVES.

Amongst many hives I have examined there will be on an average 15 per cent. queenless, and in one apiary of thirty I counted six dead, and the hives being robbed from that cause. It is a great mistake to set strong and weak hives near each other, as the latter are sure to be robbed, and, what is more detrimental, not a few of these have symptoms of foul brood. From the distance bees fly, and their proclivities to rob, the disease may be spread to a very wide extent. From the catching nature of the disease it will be easily understood why it so mysteriously appears in apiaries supposed to be completely isolated.

WHITE HEATHER.

White Heather is somewhat plentiful in the district. It is a great favourite amongst ladies, who have requisitioned me to supply them, as also are the White Harebells or *Campanula rotundifolia alba*. The wild Pansies are fine, some of them very large and beautiful. *Myosotis palustris* is simply grand. I saw some Gentians, and of course other wild flowers common in upland districts, of which I am not botanist enough to describe. The search for these further tends along with the bracing atmosphere to increase the vigour of invalids as well as that of—
A LANARKSHIRE BEE-KEEPER.

TOADS EATING BEES.—ON Sunday the 10th inst. a gentleman in the flower garden here and his valet with him were interested in watching a bee going from flower to flower over the Lobelias. Noticing a large toad underneath the Lobelia in chase of the bee they watched its movements. The toad followed the bee for some distance, caught it, and ate it. Not hearing of such a thing before, I thought the fact might be of interest to some readers of the Journal.—GEO. HAWKINS, *Ewenny Priory Gardens, Bridgend.*

TRADE CATALOGUES RECEIVED.

Sander & Co, St. Albans.—*Orchid Catalogue.*
Little & Ballantyne, Carlisle.—*Select Bulbs.*
Harrison & Sons, Leicester.—*Flowering Bulbs and Roots, 1890-91.*
Benjamin Soddy, 243, Walworth Road, London, S.E.—*Catalogue of Hyacinths, Tulips, and other Bulbs.*
Robert Veitch & Son, 54, High Street, Exeter.—*Catalogue of Dutch Bulbs and other Flower Roots.*
Fisher, Son, & Sibray, Handsworth, Sheffield.—*Catalogue of Bulbs and Flower Roots.*
W. Cooper, 751, Old Kent Road.—*Catalogue of Greenhouses, Frames, &c.*



All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Late Questions (*F. N., G. H., W. E. T. and J. H.*).—Letters arriving on Wednesday cannot be answered in the current issue.

Waterproofing Calico (*R. C.*).—You will find the method of waterproofing described in answer to another correspondent ("C. H. M."), and the information there given will possibly meet your requirements.

Fumes from Coke (*G. H.*).—If the combustion is "perfect"—that is, everything consumed—no injury will ensue; but it is doubtful if that is so, and the fumes from a furnace are better outside glass structures than in them. Your case is inadequately stated.

***Helenium pumilum* (S.).**—You are quite right. The flowers of the plant referred to on page 159 are included in a coloured group on page 78 of Carter's Catalogue of last year. It is a very accommodating plant, and will grow and flower freely in ordinary fertile soil in town and country gardens.

Thrips on Grapes (*T. T.*).—Though, as you say, you can destroy thrips on the leaves by sponging them with Fir tree oil, you "cannot sponge the bunches." You may try the Lethorion vapour cone as you suggest, and you will find another fumigating insecticide referred to in another column by a very eminent gardener.

Exhibiting Vegetables (*W. S.*).—Undoubtedly the custom is to exhibit one variety of Potato only in each dish, though some judges might possibly admit more, but the chances would be all against the exhibitor. It is never safe to depart from established custom, though the wording of a class may appear to afford the opportunity.

Purple-podded Pea (*Rustie*).—The above is the name of the variety of which you have sent pods. It is a very old Pea, but only grown as a novelty. The pods are very deep purple in colour, and retain it when dried. The peas are neither of good colour nor flavour when cooked. When the soft young pods are cooked, as they may be, and eaten like Kidney Beans, the purple colour vanishes.

Flowers for Beds in the Autumn (*Le Roi*).—If you can procure plants of dwarf early flowering Chrysanthemums, many of which are grown in 5-inch pots in nurseries, they would render your beds gay almost at once, and continue until checked by frost. In ordering plants, the best course will be to state your requirements to the vendor and leave the selection to him. You will then receive better value for your money than by making your own selection.

Capsicums Unhealthy (*R. D.*).—Without knowing the treatment the plants have received and the position they have occupied, we cannot state the precise cause of their present condition. The leaves suggest that they have not had sufficient sun and air, but too much atmospheric moisture. These plants often succeed much better in frames than more or less shaded stoves, and we have had excellent crops from plants that were plunged close to a wall facing south about the middle of June.

Poinsettia Leaves Discoloured (*T. L.*).—The appearance of the leaf suggests that it has not been able to elaborate and assimilate the sap, possibly because of insufficient sun. Though the leaf is large it is not so stout as is desirable, and perhaps the plants have been too generously fed. We should not supply them with liquid manure at present, and we do not apprehend they will be seriously injured if carefully watered and not shaded, though if they are in a shaded position now they must not be suddenly exposed to the sun.

Tomatoes not Colouring (*D. W. B.*).—The fruits you sent were not ripe, and your letter did not reach us in time to be answered last week, as it was sent to the publishing department. After keeping the fruits in the sun for a few days they decidedly improved in colour with the advance in ripening. If the fruits on the plants are not shaded by leaves, and the weather not continuously dull, and they are allowed to ripen, yet still do not colour, we can arrive at no other conclusion than that the variety is naturally pale, and we should grow another next year. We think, however, that those sent were not sufficiently exposed to the sun during the process of ripening.

Dahlia Leaves Eaten (*N. H. T.*).—There is every appearance of the leaves having been attacked by one of the leaf miners, the larvæ of various species of insects. The havoc may have been effected and the miner escaped before the damage was observed. There is nothing in the leaves now, as there usually is in cases of attack by the leaf miners, but we have noticed similar skeletonised leaves on Celery, and especially Chrysanthemums, due to leaf miners and the subsequent extraction of matter by earwigs and other predatory creatures. The only thing we can suggest is to keep a keen eye on the plants, especially at night, and, finding out the enemy, promptly take remedial steps.

Gooseberry Bushes Dying off Suddenly (*G. C.*).—This is often due to the devastation of the larvæ of the clear-wing moths, which live in burrows in the roots and stems of many plants, doing considerable damage, whole branches and sometimes whole bushes collapsing suddenly from their assaults. The most destructive to fruit trees, and particularly bush fruits, is the larvæ of *Sesia tipuliformis*, which is in the moth state not readily caught; but that is the only means of lessening the evil. They are usually found in the angles of branches or about the bushes, on which they deposit their eggs at this time of year and earlier. There is no Vine louse that attacks Gooseberries. Your letter arrived too late for being referred to last week.

Rose Leaves Diseased (*H. C.*).—The leaves are infested with a fungus, due to the damp location and ungenial soil. Collect all the leaves fallen or infested and burn them, and dress the ground with sulphate of iron at the rate of a quarter of an ounce per square yard, not pointing it in, and syringe the Roses with sulphide of potassium, of which Harris's is a good preparation—it may be had of most nurserymen—following the instructions. The Roses would be best lifted in November, following with a thorough stirring of the soil and mixing with it some old mortar rubbish and loam of a more open nature before replanting the Roses. About a sixth of old mortar rubbish would assist the Roses to make firmer wood and flower more satisfactorily, as well as

enable them to better resist disease. Draining, if necessary, should also be attended to, the drains having proper fall and outlet. In spring dress with superphosphate of lime, applying a couple of ounces per square yard, and repeat in moist weather during June, using manure only as a mulch, which should be of a lumpy nature, not more than 2 inches thick.

Mushrooms in the Summer (*J. W. C.*).—If you read the work carefully, especially the supplement to the first edition, you will find you have departed very materially from the advice on a very important matter—namely, the time of making and spawning the beds. It is only under very special and cool conditions that Mushroom beds can bear well and continuously in the summer, and the most successful cultivators do not find their culture profitable when the beds come into bearing after the end of May, though strong beds that commenced yielding at the beginning of that month or in April, and kept uniformly moist and cool, continue more or less productive till July. When Mushroom beds get so dry as to often need watering they are seldom satisfactory, and if beds are kept "too wet," as you say one of yours has been, the mycelium is destroyed. The addition of Oak leaves you mention would be likely to excite fermentation, and consequently raise the temperature; indeed it often rises a little after spawning without the addition of fermenting materials to the beds. A temperature of 90° does not usually scald the spawn. As you have succeeded in growing Mushrooms under the adverse circumstances indicated, you may expect much greater success by following the instructions in the book more explicitly.

Temporary House for Protecting Chrysanthemums (*C. H. M.*).—The plants may be sheltered very well in the way you propose. A framework of laths sufficiently strong to resist wind and bear the weight of any snow that may fall will be necessary on which to securely tack the waterproof material used for the roof, which should have sufficient slope to throw off rain. Mats will do very well for the sides of the shelter, and in severe weather should be used over the roof. Hot-water pipes are not necessary except for the latest flowering plants, but they will not do harm unless used unnecessarily, and the structure will be useful for other plants requiring protection from wet and cold. The following is a good receipt for preparing oiled calico for pits and frames:—Pale old linseed oil three parts, acetate of lead 2 ozs., white resin 8 ozs.; incorporate the acetate with a little of the oil, grinding (as painters term it) so as to thoroughly moisten it with the oil, then add the rest of the oil and the resin. These must be thoroughly incorporated in an iron pot over a gentle fire, and when hot apply with a large brush to a fine calico stretched loosely by means of tacks upon the frame. In twenty-four hours it is fit for use, but in case a stout calico is used it will be necessary to do it over a second time. The thinner the calico the less light will be obstructed, but a fine calico, whatever its strength, is necessary. When dried, as it will be the day after dressing, it should be tacked on tightly to remain.

Grapes Infested with Mealy Bug (*Old Subscriber*).—This pest is not readily eradicated from Vines and houses where it has obtained a hold. It is best assailed in autumn after the growths are matured and the Grapes are cut. An experienced gardener has found the following a good remedy. "To a 4-gallon watering pot of warm water add 4 ozs. softsoap and 1 oz. soda, dissolving, then add a wineglassful of petroleum. It will float, but must be mixed by forcing it into the water by filling a syringe with the solution and squirting it into the vessel again briskly. This will mix the oil with the solution, and it can be kept so in application by alternating squirts into the vessel and over the Vines. These must be thoroughly syringed, taking care to wet every part of the Vines. If there be any plants they must be removed from the house, the application being made in dull weather or in the evening of a calm day. It must be repeated the next day, and again after the second application. The Vines must be well dressed as soon as the leaves have for the most part fallen, and the leaves as they fall cleared away and burnt, as must also be the prunings. The Vines should be pruned when the leaves are down, and the Vines thoroughly washed and cleansed as well as every part of the house. There are petroleum and other emulsions soluble in water, which are, or ought to be advertised, as they are more easy of application, and equally efficacious for this purpose as the preceding mixture."

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*York*).—Peaches and Nectarines, as has been many times stated, cannot be named without leaves, as the glands on them are important factors in identification; it is necessary also to know whether the flowers are large or small. Even with these aids it is difficult to name fruits that are not coloured through lack of exposure to the sun. No. 3 is, we think, Rivers' Orange. On the others we can form no definite opinion. (*F. W. Smart*).—1, Duchess of Oldenburg; 2, Cox's Pomona. (*H. Osman*).—The Apple is Irish Peach; the Fig, White Marsilles.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes.

Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens should be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. —(*C. M. M.*).—*Rhodostachys pitcairniæfolia*, a native of Chili. (*W. J.*).—*Lonicera sempervirens*. (*C. J. D.*).—*Thunia alba*. (*J. P. K.*).—*Pholidota imbricata*. (*S. H. B.*).—*Pyrus Aria*.

COVENT GARDEN MARKET.—AUGUST 27TH.

MARKET very quiet and getting very bare; little or no sieve fruit reaching us.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.	
Apples, $\frac{1}{2}$ sieve	3	6	to	6	0	Lemons, case	10	0	to 15	0
" Nova Scotia and						Melons, each	1	0	to 2	0
Canada, per barrel	0	0			0	Oranges, per 100 ..	4	0		9
" Tasmanian, p. case	0	0			0	Peaches, dozen ..	1	0		8
Cherries, per $\frac{1}{2}$ sieve ..	0	0			0	Piñns $\frac{1}{2}$ sieve	0	0		0
Grapes, per lb.	0	9			3	St. Michael Pines, each..	2	0		6
Kentish Filberts, 100 lbs.	50	0			60	Strawberries, per lb.	0	2		0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes, dozen	0	0	to	0	Mushrooms, punnet ..	1	6	to	2
Asparagus, bundle	0	0		0	Mustard & Cress, punnet	0	2		0
Beans, Kidney, per lb. ..	0	3		0	Onions, bushel	3	0		4
Beet, Red, dozen	1	0		0	Parsley, dozen bunches	2	0		3
Brussels Sprouts, $\frac{1}{2}$ sieve	0	0		0	Parsnips, dozen	1	0		0
Cabbage, dozen	1	6		0	Potatoes, per cwt. ..	3	0		4
Carrots, bunch	0	4		0	New, per lb. ..	0	0		0
Cauliflowers, dozen	2	0		4	Rhubarb, bundle	0	2		0
Celery, bundle	1	0		1	Salsify, bundle	1	0		1
Coleworts, doz. bunches	2	0		4	Scorzonera, bundle ..	1	6		0
Cucumbers, doz.	2	0		3	Seakale, per bkt. ..	0	0		0
Endive, dozen	1	0		0	Shallots, per lb. ..	0	3		0
Herbs, bunch	0	2		0	Spinach, bushel	1	0		2
Leeks, bunch	0	2		0	Tomatoes, per lb. ..	0	3		0
Lettuce, dozen	0	9		1	Turnips, bunch	0	4		0

CUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	2	0	to	4	0	Lilium, various, 12 blms.	0	6	to 1 0
Asters, per bunch, French	0	9		1	0	„ longiflorum, 12 blms.	2	0	4 0
„ English, 12 bunches	3	0		6	0	Marguerites, 12 bunches	2	0	6 0
Bouvardias, bunch ..	0	6		1	0	Maidenhair Fern, dozen			
Carnations, 12 bunches ..	4	0		6	0	bunches	4	0	9 0
„ 12 blooms ..	1	0		2	0	Mignonette, 12 bunches..	1	0	3 0
Calceolaria, doz. bunches	3	0		6	0	Pansies, dozen bunches ..	1	0	2 0
Chrysanthemum, 12 blms.	1	0		3	0	Pelargoniums, 12 trusses	0	9	1 0
„ 12 bunches	4	0		12	0	„ scarlet, 12 bunches	3	0	6 0
Cornflower, doz. bunches	1	6		3	0	Pinks (various), doz. bchs.	3	0	6 0
Dahlias, dozen bunches ..	2	0		4	0	Primula (double) 12 sprays	0	6	1 0
Eschscholtzia, 12 bunches	2	0		4	0	Roses (indoor), dozen ..	0	6	1 6
Eucharis, dozen ..	3	0		4	0	„ Moss (Eng.), 12 bch.	0	0	0 0
Forget-me-not, doz. bch.	1	6		4	0	„ Red (Eng.), 12 bch.	2	0	6 0
Gardenias, 12 blooms ..	2	0		4	0	„ Red, 12 blooms ..	1	0	2 0
Gladiolus, 12 bunches ..	4	0		9	0	„ Tea, white, dozen..	0	6	2 0
Gypsophila, per bunch, Fr.	1	0		1	6	„ Yellow	2	0	4 0
Iris, various, dozen bunches	0	0		0	0	Stocks, dozen bunches ..	3	0	6 0
Lapageria, 12 blooms ..	2	0		4	0	Sweet Peas, 12 bunches	1	6	3 0
Lavender, dozen bunches	3	0		5	0	Tuberoses, 12 blooms ..	0	3	0 2

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Aralia Sieboldi, dozen ..	6	0	to	12	0	Geraniums Scarlet, p. doz.	2	0	to 6 0
Arbor Vitæ (golden) doz.	6	0		8	0	Heliotrope, per doz. ..	4	0	6 0
Asters, dozen pots ..	3	0		6	0	Hydrangea, doz. pots ..	9	0	18 0
Calceolaria, per doz. ..	4	0		6	0	Lilium lancifolium, doz.	9	0	18 0
Chrysanthemum, per doz.	6	0		24	0	" longiflorum, doz.	12	0	24 0
Climbing Plants, various,						Lily of the Valley, 12 pots	0	0	0 0
dozen pots	4	0		9	0	Lobelia, per doz.	3	0	4 0
Cyclamen, per dozen ..	0	0		0	0	Marguerite Daisy, dozen	6	0	12 0
Deutzia, 12 pots	0	0		0	0	Mignonette, per dozen ..	4	0	6 0
Dracæna terminalis, doz.	24	0		42	0	Musk, per dozen	0	0	0 0
" viridis, dozen ..	12	0		24	0	Myrtles, dozen	6	0	12 0
Epiphyllum, per dozen ..	0	0		0	0	Nasturtiums, dozen pots	0	0	0 0
Erica, Cavendishi, per pt.	0	0		0	0	Palms, in var., each ..	2	6	21 0
" various, dozen ..	12	0		18	0	Pelargoniums, per doz. ..	6	0	12 0
Euonymus, var., dozen ..	6	0		18	0	Rhodanthe, per dozen ..	4	0	6 0
Evergreens, in var., dozen	6	0		24	0	Saxifraga pyramidalis,			
Ferns, in variety, dozen ..	4	0		18	0	per dozen	0	0	0 0
Ficus elastica, each ..	1	6		7	0	Spirea, 12 pots	0	0	0 0
Foliage plants, var., each	2	0		10	0	Stocks, per doz.	0	0	0 0
Fuchsia, per doz. ..	4	0		9	0	Tropæolums, various, per			
Geraniums, Ivy, per doz.	3	0		6	0	dozen	3	0	6 0



AMONG THE SHEEP.

THE arrangement of flocks for breeding purposes receives special attention at this period of the year, and the improvement or deterioration of a flock depends very much upon the judgment

care, and enterprise given to the work. A high standard of excellence is not attained in a season or two, nor is it altogether desirable or wise to attempt too much at once, simply because the outlay involved would be so heavy that anything like profit upon expenditure would be impossible.

Bearing this well in mind we are yet able to do much every year by a close weeding out of every inferior or delicate ewe, by the careful selection of tups, or in other words by judicious breeding or cross-breeding. In the hire or purchase of tups a considerable outlay is unavoidable. A really good well bred tup is not to be bought for less than five to seven guineas, anything below the lesser price being certain to be deficient in some important point. The ordinary farmer probably does well not to aspire to a purely pedigree flock, but he may nevertheless find high breeding very much to the purpose if kept within reasonable limits. We have this season seen an exceptionally good fall of lambs from a flock of superior half-bred Suffolks, the tups being pure Cotswolds which had cost the farmer seven guineas apiece. These were obtained from Mr. W. Oakey of Great Wilbraham Hall, Cambs, from whom we have frequently had excellent Hampshire Downs. With Mr. Oakey tups of the best breeds are a specialty, and many a farmer will make a special journey to Wilbraham during the next week or two to select animals for the coming season.

One of the most remarkable examples of flock improvement is that of the College of Agriculture at Downton. Spirited buying, careful weeding, and constant attention has led to such decided improvement that the average price of the tups has risen annually at the rate of more than £1 per head, the average per head now being over £10. This is a pure Hampshire down flock of some 1200 prime ewes, notable for early maturity, the lambs attaining the size of full grown hoggets by the middle of June, and they are then worth from 60s. to 70s. apiece. At the annual sale held at the College on the 7th inst. ten lamb tups were let at an average price of £23 16s. 9d., the highest amount being fifty guineas for one of the best young rams that ever entered a sale-ring. A similar amount was also realised for the best lamb tup among those which were sold. The Downton College flock has become so famous in the showyard for all classes of Hampshire downs that the leading place appears to be taken by it among flocks of this breed. Other flocks have also an excellent record, the averages for tups at recent tup sales being Winterbourne Stoke, £8 5s.; Stratford-sub-Castle, nearly as high; and Mr. James Harris of Winchester, £6 4s. 2d.

Of the favour in which Shropshire sheep continue to be held we have evidence in the high prices realised in recent sales, plenty of tups going for £50 each. At the Yardley sale one of Mr. G. Graham's shearling tups sold for 105 guineas, and at the Hattons sale the ram average was £19 17s. 1d., and the ewe average £5 10s. 10d. At the Uppington sale a two-shear ram also realised 105 guineas, the average price being £18 1s. 2d. The progeny of a 100-guinea ram should be profitable, but very much depends upon the ewes.

Although the principal ram sales will be held this month, that of ordinary animals will continue for another month. Lambing has to be timed in accordance with the earliness or lateness of each locality. Earliness is all-important to ram breeders, but for flocks generally the root crop, pasture area, green crops on arable land, and store of dry fodder, all exercise some influence upon the lambing season, and must be taken into account now. We want no starveling lambs, and must be prepared to feed them well enough to promote vigorous growth and healthy condition from the birth.

Appeals to scientific men for aid, and the remarks often made about foot-rot, go to show the prevalence of much ignorance about this very common and troublesome complaint among sheep. We have seen it described as soreness and ulcers either in the division of the hoof or on the outside of it. But we have had many a case where the hoof has been much swollen and heated, without any exterior sore or wound of any kind. In due course the swelling

bursts, there is a discharge of pus; linseed meal poultices, sponging with warm water, and dressing with Gells' ointment, gradually effecting a cure. Flocks affected with foot-rot cannot be quite cured; the disease may be kept very much under, but it will break out again in a tainted flock, and we certainly should not like to add purchased animals to such a flock, as they would certainly have foot-rot sooner or later.

WORK ON THE HOME FARM.

There is nothing like regularity or order in farm work this summer; while corn stacks are being built grass is being mown for hay. Corn harvest and haymaking are going on together in the midland and eastern counties. Only in the west has the hay been secured in good time and order; and even there the usual order of things is reversed, for the pastures are almost bare, while the usually parched pastures of East Anglia abound with luxuriant growth. In the Leicestershire Stilton cheese district we have this year seen hay cobs being made in the midst of harvest time. A Leicestershire cob is literally a big haycock 8 or 10 feet in diameter. It is well trampled by a man, and when it is a few feet in height an ordinary waggon rope is placed around it near the bottom, for a horse to draw it along upon the surface of the meadow, while more and more hay is piled on, till it becomes too heavy for the horse to move it further. It is then topped up, and when finished has very much the appearance of a huge sugar-loaf. The hay is then safe from harm by rain, and can be removed to the rick at any time. Another curious feature in Leicestershire pastures at this season of the year are the huge conical dung heaps, built at such an acute angle as to throw off all rain; and there would certainly be less tendency to violent heating in such heaps than there is in the common flat angular mixen. They are not placed by the roadside or near a hedge, but are right out in the middle of the pasture, so that any liquid manure escaping from the heap would not be wasted.

The large herds of cows are not driven from the pasture for the milking, but are milked in the open wherever they may be, without trouble, as they are accustomed to stand still for milking without being tied up. As each cow is milked the milk is poured into a large tin "churn" with a hinged lid, which is drawn about the field in a light cart. The advantage of this plan is obvious. The milk goes to the dairy perfectly sweet, for the pails are quite clean, and the churn which we saw glistened like silver, all labour about cowsheds and yards is avoided, and much time saved in several ways. If that time were devoted to the extermination of the "Leicestershire Gooseberries," as the Thistles which abound in the pastures are termed, it would be much to the Stilton cheese maker's advantage, for in many parts the Thistles are so thick as to quite prevent grazing.

OUR LETTER BOX.

Brewers' Grains for Cows (A. J.).—Brewers' grains are certainly not to be regarded as a prime article of food for dairy cows, but a moderate quantity may be used with advantage mixed with other food. Here is the analysis—Water, 76.4; Albuminoids (flesh formers), 5.0; fats, 0.4; carbo-hydrates (heat givers), 9.4; ash, 1.2; which shows a fair proportion of nutriment, the albuminoids being rather superior to those of rich pasture; but then a cow may eat its fill of pasture herbage without risk of taint to milk or butter, while a full dietary of grains would undoubtedly affect the flavour of butter. The rule, therefore, is a good one to use grains liberally only for cows the milk from which is used or sold at once, and only moderately for cows when the milk is used for butter. Do not use any linseed cake for milking cows, a little cotton cake and palm nutmeal are much preferable.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain
1890. August.		Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min.	In sun.	On grass		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.		
Sunday		17	29.975	62.4	55.7	S.	61.2	73.1	50.0	119.2	45.3	—
Monday		18	29.872	60.3	57.1	N.E.	61.8	73.8	54.3	113.6	51.2	0.079
Tuesday		19	29.824	56.9	55.2	N.E.	61.9	60.1	53.9	70.0	51.4	0.402
Wednesday ..		20	29.881	61.0	58.3	N.	60.4	69.9	55.2	116.8	55.6	—
Thursday		21	30.047	61.7	57.2	S.W.	60.8	66.8	55.6	85.6	52.1	0.050
Friday		22	30.095	59.1	53.2	S.W.	60.0	68.3	51.8	121.0	48.5	—
Saturday		23	29.694	61.8	58.3	S.	60.1	69.5	57.1	119.3	54.2	0.074
			29.913	60.5	56.4		60.9	68.8	53.8	106.5	51.2	0.545

REMARKS.

17th.—Bright morning, fine day and night.
18th.—Dull and heavy early; dark, high fog at 10 A.M.; bright sun at 12 noon; fine rest of day and night.
19th.—Dull, heavy morning; rain at 9.30 A.M., and off and on all day.
20th.—Early morning dull and wet; fine at 9 A.M.; fine afternoon and night.
21st.—Fine but dull early, generally dull with an occasional gleam of sun; sharp rain at 5.30 P.M. for a few minutes; fine but dull night.
22nd.—Bright early; fine and bright all day; fine night.
23rd.—Dull and blustery morning; sharp rain at 11.30 A.M.; sunshine at 12.30; fine remainder of day and night.
Temperature very similar to previous weeks; night temperatures very uniform.—G. J. SYMONS.



HOWEVER sharply opinions may be divided on certain matters, they are forgotten for the time in the face of a threatened famine, and the best dictates of humanity evoke feelings of sympathy with the poor people who have to suffer extreme privations through the loss of a staple crop. This unfortunately appears to be not a very remote probability in some districts in Ireland. It was hoped by all that the reports which have been published from time to time of the condition of the Potato crops there were not well founded. It is well known that the element of fear tends to exaggeration of expression in reference to a dreaded calamity that is felt to be impending, and it would be idle to ignore the fact that in these days of a wild race for news there is a strong disposition to indulge in sensationalism to arrest the attention of a never satisfied public. Therefore it was that the real condition of the crops in the Sister Isle was slowly understood outside it. I was amongst those who had indulged in the hope that the Potatoes in large districts, where practically nothing else is grown, were not so severely stricken as had been depicted. I would fain hope so still, but since Mr. Lewis Castle has seen and described them the extreme seriousness of the visitation may be admitted. My coadjutor is not prone to exaggeration in statement, and he would have much greater pleasure in showing the best side of Ireland than the worst, therefore what he has said on the subject under notice may be taken as a thoughtful record of actual facts.

Confirmatory evidence is afforded by the official report of the Irish Land Commissioners, which deals with the condition and prospects of the Potato crop up to August 15th. The report is a gloomy one, but not without a ray of light. Only in five or six counties is the crop said to be an average one, and it is noteworthy that this occurs in districts where the crops are grown for sale. Whether those districts are naturally adapted for Potato culture, and so situated in respect to altitude, drainage, and rainfall as to be repellent to the spread of the disease, I know not; but the report contains internal evidence that a goodly share of the immunity is due to intelligent management and good cultivation. Where Potatoes are extensively grown for sale in England much thought is devoted to the production of full and sound crops. The selection of varieties best adapted to the soil and situation, the preparation of the soil, the choosing of tubers for planting both in respect to size, soundness, change of seed, vitality, also manuring and general routine work, all receive the most careful attention, founded both on experience on a large scale, and trials of different methods on a small, conducted on a scientific basis with the object of gaining information that will enable the best possible return to be obtained from the amount invested in the culture. The prices for Potatoes have ruled so low of late years that it has only been by the utmost care and best possible management that even a small profit could be obtained; and for gaining anything like a satisfactory return the fullest crops of the best marketable tubers have been essential. Necessity has stimulated endeavour in the production of such crops, and there is no manner of doubt that they are now much better than was the case some years ago, when a loose slipshod routine generally prevailed. It may be, then, that in those districts of Ireland where the crops are the best and the murrain the least destructive that the happy result is to a consider-

able extent the outcome of better management than obtains where worthless disease-stricken crops are so lamentably prevalent.

There are, no doubt, localities in Ireland, as in England, which are distinctly unfavourable to the production of full sound crops of Potatoes, and extremely liable to the attacks of the murrain. It may, indeed, be beyond the power of man to succeed in the culture during a drenching season, and where the winds, as the peasant said, "bring the blight from the sea." They bring it inasmuch as they bring the means by which it is engendered, exists, and spreads—moisture laden air over already stagnant soil. Under those conditions the most robust varieties, with the strongest leaf power for maintaining the purity of the sap, may eventually be seized by the enemy and converted into a mass of blackness and decay; but they will be the last to succumb, as the succulent stemmed sorts, not strong enough to stand upright, and with weak acting leaves, will be, as they always have been, the first to fail. It may be assumed that at least a large number of the Irish peasantry with their patchwork plots, which just keep them and Denis, the pig, alive in fair seasons, may not be aware of these facts, and if they were, are not able to procure more suitable varieties for battling with adverse circumstances, but must, perforce, plant such as they have, and of these possibly, and in seasons of scarcity certainly, the worst tubers of essentially bad stocks, because the best have been eaten, the small and weak being saved for seed. That used to be the custom in English counties before the scourge came, and for some years subsequently, until familiar varieties were annihilated, stronger sorts raised, and better methods adopted.

That the disease is intensified not by inferior sorts alone but by impoverished soil is apparent from the observations of the Commissioners, such as an "absolute failure in poor land" in one district; and in another, "In good well-farmed land the disease is not serious, but in poor and badly farmed land the tops are black and tubers affected." Then speaking of another county they say—

"Crops very much below average; disease general throughout; distress appears worse along the seacoast, where Potatoes planted in bog were much damaged by early frosts. The effect of the blight has been to almost destroy the crop in some cases; stalks blackened and withered up; tubers not as yet affected except in rare instances, but generally very small and immature, owing to blight setting in unusually early. Tubers in many instances will be absolutely unfit for human food. In the poorer badly cultivated districts the crop will be an entire failure; in good dry well farmed land results will prove much better."

That is only what might be expected. If everything but water of which the Potato is composed is drawn out of the land by continuous cropping, the result is inevitable. Neither an Englishman nor an Irishman can grow good Potatoes under those conditions, any more than he can draw good money out of a bank if he has not put any in. It is true that the "dry" land indicated as favourable cannot be made so by cultivators in a wet season; but much land might be made drier than it is by draining, and even without the cost of digging trenches and laying tiles, however desirable and profitable such work may be, but simply by deeper stirring and breaking up the hard crust of the subsoil, that may have been undisturbed for generations, so that the water can pass more readily down; and also—and this is not less important—by planting strong, rigid stemmed varieties thinly, so that the sun can shine down between the rows on occasional bright days, and evaporation can have free action on every favourable opportunity. When the ground is covered by a thicket of soft stems, the result both of inherent weakness and close planting, the soil is simply saturated—choked, and reeking vapour on warm days rots the growths in its struggle to escape. We have no right to expect healthy plants under these circumstances, and the unhealthy are attacked by the fungus the first, and suffer the most.

From a remark made by Mr. Castle in his article last week it is almost certain that the disease is unwittingly invited by the

crowded lazy-bed method of culture that appears to be adopted. Growing the plants on raised beds may be the very best system to pursue in some soils and situations, but if they are planted so closely as to grow into a dense mass of interlacing stems, and a crowd of leaves struggling with each other for light and perishing in the contest, the advantages which the ridges might otherwise possess vanish, and disease runs riot through the spoiled plantations.

A change of methods in the direction indicated—the thinner planting of stronger upright-growing varieties in low-lying positions where the rainfall is great, keeping the land clean, and not covered with growths as with a blanket, is the most likely course of procedure for, if not preventing the disease, minimising its virulence; but a most serious matter is the impoverished soil. Early varieties, which often escape the disease when late sorts fail, have been recommended, but these require the best of soil for yielding substantial crops. In very poor land the return they give is next to nothing. There is no doubt of what much land in Ireland needs for restoring its lost Potato-growing fertility—potash, phosphates, lime, and perhaps the cheapest manner in which they can be conveyed is in the form of superphosphate of lime and kainit. How they are to be got to the starving land it is not in my province to suggest. Many persons appear to be anxious to do something for Ireland, as I am; but the best I can give is this small contribution.—J. WRIGHT.

THE GUILDHALL (LONDON) FRUIT SHOW.

WHEN Sir James Whitehead, Bart., was Lord Mayor of London last year he on more than one occasion directed prominent attention to the subject of fruit culture, and the presentation of fruit according to ancient custom by the Fruiterers' Company at the Mansion House, he desired should consist entirely of home grown produce. Sir James was chosen Master of the Company for the present year, and with the object of promoting the "extended and improved culture of useful fruit in the homesteads and cottage gardens of the kingdom" an Exhibition, as has been previously indicated, is to be held in the Guildhall on the 6th, 7th and 8th of October. The Executive Committee appointed to carry out the project are Sir James Whitehead, Bart. (Chairman), with Dr. Fotherby and Messrs. H. R. Williams, R. S. Mason, A. H. Smee, T. F. Rivers, J. Cheal, G. Bunyard and J. Wright. The schedule that has been prepared by them is now before us.

In order that northern growers may not be handicapped the country has been divided into three zones by drawing a line from east to west, thus separating them from the south, and from about the centre of that main boundary line a second line was drawn to the south coast, thus forming two other zones. The counties in each are enumerated in the schedule, and prizes are offered in each zone. For cottagers the total number is seventy-two, varying in amount from 30s. to 10s. for three dishes of Apples and Pears respectively, and 15s. to 10s. for single dishes. For farmers there are forty-five prizes, ranging from 40s. to 20s. for six dishes, and 20s. to 10s. for three dishes of the same kinds of fruit. For gardeners and amateurs there are sixty-three prizes, the amounts being substantially the same as in the farmers' section for hardy fruit.

Prizes are also offered to amateurs and gardeners in the United Kingdom for Grapes and Tomatoes. The prizes for six bunches of black and six of white Grapes respectively are—firsts, the Company's silver medal and £3; seconds, £3; and thirds, £2. A class is also provided for fifty dishes of hardy fruit, thirty Apples and twenty Pears, for which the gold medal, silver-gilt and silver medal of the Company are offered, and will be worth winning as the first of the kind provided for distribution.

Prizes are offered for jams and preserves. A class is also provided for nurserymen in the respective zones for tables of fruit. For these no money prizes are given, but the framed certificates of the Fruiterers' Company will be granted for meritorious exhibits—the first that have been prepared for the purpose, and will no doubt be appreciated by their possessors.

We are desired to request gardeners and other interested in fruit culture to make this Exhibition known amongst cottagers, farmers, and friends in their districts, and to write for schedules, that can be usefully distributed. These will be most readily supplied by O. C. T. Eagleton, Esq., 40, Chancery Lane, London, W.C.

There is such a general scarcity of fruit this year that we suspect there will be room for all that are sent; but, as a rule, the lighter the crops the finer the specimens, and very good examples should, therefore, be forthcoming.

TREE PLANTING.

To the popular belief that winter is the time for tree planting, the failure of many a planting scheme, the loss of thousands of young trees, and the slow growth of the survivors is probably owing. No doubt careless slovenly work has caused some losses, but it is deficient practical knowledge that renders so much of the results of this important work unsatisfactory. A man may have the greatest fondness for trees, may make it one of the chief objects of life to improve his estate by judicious planting and thinning, and yet be ignorant of the cultural points upon which success so entirely depends. Failures are most vexatious where success is known to be possible. Here is a case in point. It became necessary to remove a considerable number of young fruit trees from a kitchen garden, and it was decided to turn them to account for making two orchards, or plantations rather, one in a deep rich loam, the other in a light gravelly soil. The trees were fine healthy young pyramids from 5 to 7 feet in height, very robust, and in every way suitable for the required purpose; they were transplanted, but for five years subsequently they made no appreciable growth. There they remained year after year alive, but making no progress and bearing no fruit. Whether the roots were much lacerated or reduced, or were much exposed to air and frost during the transplanting, I am unable to say, for I am only able to speak positively to the facts of planting results which during the time mentioned came under my own observation. Certain it is that there must have been some lamentable bungling to have so seriously arrested the growth of healthy trees in a generous soil where timber trees and Conifers were all growing with remarkable vigour.

I mention this instance of failure by way of warning, and now proceed to show what is necessary to be done in preparing for planting, in planting, and in the subsequent care of the trees.

Every tree established in the soil that is to be transplanted this autumn should now, at once, have its leading roots severed by a spade at distances of 18 inches to 3 feet from the stem, according to its size. This will induce such a free putting forth of rootlets, every one of which is a feeder or absorber of food from the soil for the tree, that when the tree is transplanted in October or early in November it is certain to become quickly established in the soil and to grow freely and strongly next year if only the planting and subsequent management is correct.

The most delicate and sensitive parts of the roots are the extremities; it is there that the rootlets or feeders are. These rootlets are thickset with minute hair-like filaments, and it is these filaments precisely through which the tree obtains food and moisture from the soil. When the rising temperature of spring causes the buds to swell, sap is drawn from the adjacent tissue, its place is supplied by other stored sap from cells around and below it, and so onwards down to the roots, which should be in a condition to afford a full supply then and onwards continuously throughout the season of growth. The roots of healthy trees well established in the soil always do this, and the trees sustain no check, but those of newly planted trees often fail to respond to this call of Nature, simply because they cannot. Either from late or careless planting they have no rootlets, and till these feeders are formed there is a cessation of leaf and branch growth, and the tree sustains a serious check just when it ought to be in the full flush and pride of spring growth.

This spring-halt is common to all badly planted trees. I have seen it in Grape Vines placed in costly glass houses, and planted in borders prepared for them with elaborate care, in fruit and forest trees of all sorts, in bush fruit and shrubs also, and it is just because I have so seen it that I am writing this article at the present time to beg all who have planting to do in the coming season to be on the alert now, and to have everything in readiness for early autumn planting. If you have to transplant trees or shrubs whose roots have not been disturbed for three or four or more years secure plenty of feeders in the way I have shown, and you will have taken the first and most important step towards final success. If you have stations to prepare for tree or shrub get them all done in September before heavy autumnal rain sets in. Seventy-two cubic feet of sound fertile soil is necessary for every fruit or forest tree planted in a prepared station; or, in other words, the station soil should be 6 feet square and 2 feet deep, with at least 6 inches of gravel or broken stones beneath it, and if the subsoil is at all of a close retentive nature be very sure to make due provision for keeping it quite free from any accumulation of stagnant water by

placing a row of 2-inch land drain pipes across the middle of the station beneath the gravel, and connecting them with the nearest drain or outfall.

Land for plantations, belts, and clumps of forest trees should all be trenched two-spit deep, and the subsoil beneath the lower spit well broken up with a strong full-sized digging spud or fork. Although this work is done by the perch, it answers best to lend the workmen tools, upon condition that they are to replace any that are broken through carelessness. A gang of men got together, often hastily, for such work, is certain to have many old tools with which it is quite impossible to do good work, and it is clearly in the master's interest to supply strong useful tools, and to see that good work is done with them. The depth must be gauged frequently, and a sharp eye kept upon the bottom spit men, who can easily scamp much work if not looked after very closely. See that they send their tools well into the subsoil, and insist upon having good work for good pay.

For fruit plantations precisely the same process of trenching is necessary, and in addition work in plenty of old well-decayed farm-yard manure, or decayed dung from the stable, cowyard, or pigstye, it matters not which. To grow fine fruit and plenty of it we must have robust growth. The fruit trees which I planted in Sussex some twenty years ago, to which Mr. Wright calls attention on page 152, had plenty of such manure in the soil, and also had plenty of sewage regularly in summer. At the outset I saw that the natural soil was very low in fertility; timber, underwood, and pasture all showed this clearly. Thorough drainage and the free use of manure, coal ashes, and lime, soon wrought a radical change, the best evidence of which was afforded in the fruit trees which Mr. Wright saw in the fourth year from the planting, each clothing between 100 and 200 square feet of wall space, and bearing full crops of fruit; in the Raspberry canes 10 and 12 feet in height, and in the extraordinary vigour of other tree, shrub, and plant growth. Always since that time the inseparable trio—drainage, fertility, and mechanical division—have formed the basis of my practice in garden, farm, and forest soil, and it is assuredly a safe basis which never fails one. Last autumn I made a plantation of Duchess of Oldenburg Apple in the Essex clay, which was trenched and well dressed with plenty of manure taken from an old mixen. Nothing can be more satisfactory than the growth of the trees this summer. Two or three years of such robust growth is quite certain to lead to a yield of really fine fruit, and there is no more saleable fruit than this handsome and most prolific Apple. Only take care to purchase trees on the Paradise stock, and three or four years old, then with soil well prepared, and careful planting, success is pretty well assured.

Planting is a matter of the first importance, and I must leave that for my next paper on this important subject. My especial desire was to sound a note of warning to planters to be ready. I have done so, and strongly advise prompt action, in order that all may be in readiness for planting either in October or early in November.—EDWARD LUCKHURST, *Warrens, Harold Wood, Romford.*

GROWING AND SELLING FRUIT.

(Continued from page 175.)

CHOICE OF VARIETIES.—This will be treated of under the separate headings of each kind of fruit, and a few words on the subject in general are all that are required here. In the first place, only two or three varieties of each kind should be planted if profit is to be the object in view. Secondly, it is impossible to give a list of varieties that will suit every case, especially of Apples and Strawberries, because local circumstances as to soil and atmosphere greatly affect these two fruits. If any doubt is felt on this point the best plan is to consult a professional gardener or fruit grower who has been for some time in the district, and who will be able to give advice from his own experience as to what varieties are best suited for the purpose required in the locality. It should always be kept in mind that size, colour, and firm texture are all that are required by market salesmen.

LOCAL SOCIETIES FOR ENCOURAGING FRUIT GROWING.—These are a great aid to the cottager and others who are not able to employ professional assistance, also of benefit to the professional men who join them, and may easily be started by a few persons in any parish. All that is necessary is that a few who are interested in the matter should agree to meet together in the parish reading room or club room, and compare notes and experience, taking one or two subjects once a fortnight, and bringing specimens of whatever is under consideration for the time being, or anything specially worthy of notice. I have had considerable experience of similar meetings, and can testify to their utility when properly managed. A few simple rules are required to secure order at the meetings and

start the society on a firm basis, appoint officials, &c.; also a small contribution from each member (about 6d. quarterly would probably suffice) to pay the few small charges that necessarily arise. By forming societies like this growers could soon find out the best markets in the kingdom; also any unprincipled dealers could be reported for mutual benefit and protection, and if all the societies were registered at a central office much good might be done in many ways to develop and encourage the home fruit trade.

KINDS OF FRUIT BEST ADAPTED FOR PROFITABLE FRUIT CULTURE.—These are Apples, Strawberries, Black Currants, Gooseberries, Raspberries, Red Currants, Cob Nuts, Cherries, Plums, and Damsons, and are mentioned here in their proper order when profit is the chief consideration. Besides the above, which are for growing in the open fields, the walls of houses and outbuildings will bring in good returns if covered with Peaches, Apricots, Pears, or Morello Cherries.

THE APPLE.

The Apple is placed first on the list because in the majority of instances it is the most profitable fruit the cottager and those with small plantations can grow. It has one great advantage over almost all other fruits—viz, it will keep in marketable condition for several weeks, while most others have to be disposed of as soon as gathered. It is not estimated highly by many people as a "profitable fruit," because they are only acquainted with inferior varieties or grow too many sorts, and therefore do not get enough to sell profitably.

SOIL.—The Apple will grow in almost every kind of soil with care and attention, but thrives best in a good deep loam that is not too retentive of moisture, and, on the other hand, is not liable to become very dry in summer. Stony ground will grow good Apples also if deep and moderately moist at the bottom. Soils which contain a large quantity of iron are not good. Stony ground will require more manure than a good deep loam does, but, on the other hand, has some advantages which do not always accompany a richer soil. For instance, in dull and wet seasons the wood will ripen much better in poor stony soils than in richer ones, and thus a good crop will be more likely to follow. Apples should not be planted in ground that contains much water until drains have been laid to remedy this defect. Stagnant water in the soil is fatal to success in the culture of this fruit, being one of the causes of the disease called canker, it also prevents the wood ripening properly in the autumn. Soils that contain much chalk are not recommended for Apples.

SITUATION.—North of London Apples should not be planted in low and damp positions, as the spring frosts are always far more severe in such places. It is best to plant in high and airy situations, and plant trees for shelter as before advised. In districts south of London this is not quite so important.

PLANTING.—This should be completed as early as possible in the autumn after the trees have commenced shedding their leaves. Standard trees on stems 5 or 6 feet high are the most profitable in the end, and may be bought from 18s. to 24s. per dozen, or cheaper in large quantities. They may also be raised at home by sowing the pips of the wild Crab, and budding or grafting the young plants when they are about three years old with good sorts; but as this takes such a long time before the trees arrive at a bearing size, it is not recommended in fruit growing for profit. Standard Apples should be planted 30 feet apart each way (it is often recommended to plant closer than this, but it should be remembered the trees require abundance of air and light when they reach their full size), and will then cost about £8 per acre for planting and staking, exclusive of fencing, draining, &c., which are not always necessary. The spaces between may be cropped with Strawberries, bush fruits, vegetables, or a combination of these, until the Apple trees reach their full size. Strong growing healthy young trees should be selected for planting with straight and stout stems and clean healthy looking bark; in about eight years after planting they will bear from 1 to 2 bushels per tree, and thus give 70 bushels per acre, worth about £15. After this the crop will increase rapidly until the trees reach their full size, when in good seasons from 400 to 500 bushels per acre may be gathered, worth £70 to £90 gross. A word of caution is here necessary. The grower must not expect a full return every year, or he will be greatly disappointed; indeed a full crop is very seldom brought to maturity.

If the situation is considered too open for standard trees on account of the wind blowing off the fruit or from any other cause—for instance, if the soil is too shallow to support large standard trees—this may best be judged by the growth of timber trees near. In such cases dwarf trees may be planted, and will pay well, although it is not possible to get such large crops from these as from standard trees. They may be planted 12 feet apart in the rows, and 16 feet between the rows, and should always be obtained on the Crab

stock. The smaller growing Paradise stock, although giving some very showy fruit, is of no use for profitable fruit culture, the weight grown per acre not being enough to pay well. Young trees may be bought cheaply as maidens—that is, one year from the graft or bud. They will consist of two or three shoots. The straightest and most central of these should be shortened back to about 1 foot in length at the spring pruning, the others to 6 inches. What is required eventually of these dwarf trees is to get them to form one central stem as straight as possible about 10 feet in height, well furnished with side branches all round to within 18 inches of the ground, and pyramidal in shape like a sugarloaf. The central shoot should have about one-fourth of its length cut off every year in order to make it branch out well, the side branches also being shortened to a similar extent, leaving the bud at the end pointing in the direction it is desirable for the young shoot to grow, and keeping them tied into position when necessary. When the tree reaches the required size it must be kept within bounds after by pruning the young shoots back every winter to within an inch of where they started the previous spring. Summer pruning is also of great advantage to these dwarf trees, and consists in shortening all young shoots back to about 4 inches in length by the end of July, except those required for extending the branches, which should be left full length until the winter. By this means the fruit is more exposed to the sun, and the flower buds for next year are strengthened. Trees treated on this system will bear good fruit in five or six years from the graft, and at the age of twelve years will bear from one two bushels each, and be worth from £40 to £50 per acre gross in a good season with a full crop. The cost of the trees and planting in the first instance, exclusive of fencing, draining, and all extras, will be about £12 per acre, and when the trees are over four years old the cost of pruning, training, &c., yearly will be from £2 to £4 per acre. Sometimes these dwarf trees persist in growing strongly without fruiting. A severe check is the only cure for this, and is best accomplished by digging a trench round the tree in the winter about 5 feet from the stem, laying every root bare without bruising them, and working out all the soil from underneath with steel forks, cutting asunder all roots that go down straight beneath the tree and all that extend beyond the trench, then filling up the trench again, and mulch as for newly planted trees. I have a tree of Alfriston which was treated in this manner, and the next year it was full of fruit although it had never borne any fruit previously through growing too strongly to form fruiting buds.

Having decided what kind of trees to plant they should be placed in position as soon as possible, spreading the roots out evenly all round, treading the soil firmly, and finishing off by mulching as advised in the general directions for planting. As soon as standard trees are planted they should be fastened upright by putting a stake down on each side of the tree 9 inches from the stem, and as tall as the first branches of the top. A cross piece should be nailed to each stake at the top and the tree tied to this with tarred string. A piece of old sacking should first be put round the stem of the tree to prevent any injury to the bark. These stakes (two for each tree) will last as long as required if made of well seasoned larch poles, prepared some months before they are wanted and dipped in creosote or boiling tar 2 feet in length at the bottom. When the trees are made secure and mulched no more attention will be required until pruning time in February, unless rabbits or hares abound in the neighbourhood; if so it will be necessary to protect the trees as soon as planted either by surrounding the whole plantation with a rabbit proof fencing, or placing a narrow strip of wire netting about 2 feet high round the stem. This should be cut just wide enough to allow the tree to swell about three times its present size, and then have two ties with galvanised wire at the edges to keep it together. A cheaper way than this in the first instance, but not lasting so long, is to wind a strip of stout brown paper round the stem of the tree and then to put some ordinary coal tar on the paper; this will last about three years, but this will require a little fresh tar every winter before snow comes.

PRUNING.—If the trees are planted before the end of December, and have plenty of good roots, the young shoots forming the top should be shortened back in the following February or early in March. It is easy to see where they were cut the previous winter, and which part has grown since then. They ought to have made five or more good shoots. These should be shortened back, leaving about 9 inches in length, and cutting to a bud that points outwards from the centre of the tree. It is especially necessary to be careful about this latter point in order to get the young tree to grow open in the centre. Any weak shoots should be cut back to about 2 inches, also any that are crossing others or growing towards the centre; what is required being from five to seven main branches growing upwards and outwards, so as to form an even-shaped and well-branched head or top. No more attention will be required

until the following February, when any shoots should be cut well back that are crossing the others or growing inwards as before. The leading shoots may be left entire if there are sufficient, if not they should be shortened back half their length. Any shoots growing outwards from these may be left entire if they have plenty of room. After this very little pruning will be required for these standard trees, with the exception of cutting the small branches out from the centre of the trees in two or three years, and thinning out a few of the weaker branches all over if the top becomes thick. This is best done in autumn as soon as the fruit is gathered, as the strength of the branches is more easily judged at that time; also the thickness of the top can be better seen. The branches removed should be cut off close to the larger ones without leaving any stumps remaining. All that is necessary to attend to besides this is to keep the ground well cultivated to prevent weeds growing, and to attend to the stakes and ties as required in order to keep the trees from blowing about by the wind, also to ensure that the ties do not bruise the skin or bark of the trees.

If from any cause the trees are not planted until late in the spring they will not make much growth the first year, and pruning is best deferred until the next spring, and then performed as advised for the first season. Treated in this manner they grow away freely at once, having good roots to supply them with nourishment.

GATHERING.—Apples for storing are ready to gather when they leave the tree easily, and on cutting the fruit open the seeds are found to be turning brown. For early use and marketing this is of no consequence. They may be had as soon as they reach the size of small Oranges, but if required for storing the colour of the seeds or pips should always be brown when they are gathered, or they will shrivel in the skin and be useless for sale. Great care should be taken in gathering not to bruise the fruit, as this is fatal both to good prices and to good keeping. If intended for present sale they should be packed and sent off as soon as possible. Never gather when they are damp or wet; and if by any means a sharp frost occurs while they are on the trees (as in the case of late varieties it occasionally will do) leave them until another day before gathering.

PACKING.—This must vary according to the custom of the market for which they are intended. Those for London markets should be packed in "sieves" or baskets holding about one bushel, which the salesmen supply in some cases, and in others the growers find their own. Cover the sides with "fruit paper" or "cap paper," the fruit being graded—that is, each side kept separate—taking especial care that all the fruit in each package is of the same size, sort, and quality (the salesman should be made to understand this), and that no damaged fruits are put in. Place another sheet of paper over the top, then some dry straw or hay, or if in the summer long green grass is generally used. These should be flattened over the top of the "sieve," to prevent bruising when another is placed on the top. A stick of hazel about as thick as a man's thumb should then be split lengthwise, and the two pieces placed crosswise over the top of the straw, pushing the ends through under the top of the basket to keep them in their place, and cutting them off even. Each basket then only requires a label, and is ready for the market. In the northern provincial towns, such as Manchester, Sheffield, Bradford, &c., Apples are sold by the stone of 14 lbs. weight at from 1s. to 2s. 6d. per stone, and it is not important what kind of parcels they are packed in, whether boxes or baskets, so long as they travel well, are easily lifted about by one or two men, and the nett weight of the fruit is carefully ascertained in stones or half-stones by weighing the packages before filling and again after. Whatever market they are intended for they must always be packed with the same care, honestly graded, and should arrive not later than the middle of January, after which date the markets are flooded with inferior but more showy American fruit, which bring the prices down for English samples.

STORING.—Apples may easily be stored so that they will keep until the end of January. They may also be kept until June, but as there is nothing gained by keeping them so late—in fact prices are much lower than when sold earlier—it would be useless to treat of it here. To keep Apples until January a dry room or shed is required, where frost can be excluded from them, and which can be ventilated in favourable weather to keep the air pure and healthy. If this room is partly or almost entirely underground the fruit will keep fresher and firmer, provided the air is not allowed to get too damp, and the walls are thoroughly waterproof. All light should be carefully excluded, except when packing or examining the fruit. Never lay the Apples on straw or hay, or anything of a similar nature, as it imparts a musty flavour to them. All strong smells, such as tobacco smoke, tar, carbolic acid, or paint should be carefully kept from them. Do not lay the fruit on earth, brick, or stone floors, or on new deal boards. Bare boards

will do very well if not made of deal or any strong smelling wood, If not intended for keeping more than a month, the fruits may be three or four deep if carefully put down, but if space allows they are much the best in single layers, especially some kinds which "sweat" very much soon after they are gathered. If intended for keeping any length of time provision must be made when storing for examination once a week. In such cases they should only be stored one layer deep, and it is best to fit up shelves to lay them on just wide enough to admit of easy examination without moving the fruit. Never store any small or deformed fruit, they should be sold when gathered to the cider makers or hawkers. It is a good plan in frosty weather to spread sheets of newspaper all over the Apples. These assist in protecting the fruit, and if there is any danger of frost getting in the room, some petroleum lamps or gas stoves should be lighted, so as to keep the temperature above 36° and under 40°, as many varieties are quite spoiled if frozen severely.—W. H. DIVERS.

(To be continued.)

THE BRITISH FRUIT GROWERS' ASSOCIATION.

A MEETING of the Executive Committee of the above Association was held in the Horticultural Club Room, Hotel Windsor, Victoria Street, S.W., at 5 P.M. on Thursday, August 28th, Mr. T. F. Rivers in the chair. After the minutes of the previous meeting had been read and confirmed, the Hon. Secretary presented the following report with regard to the business transacted since the July meeting.

The Strawberry Report.—In accordance with the resolution of the Committee the report of the Strawberry Exhibition and Conference in St. Stephen's Hall, Westminster, on June 27th last has been printed in book form and distributed free to all members. It is also on sale to the general public, and can be had post free for 1s. from Mr. Lewis Castle, Hotham House, Merton, Surrey. In addition to the complete historical and cultural information embodied in the papers read at the Conference, a chapter has been incorporated on Strawberry Forcing by an experienced cultivator. Many letters have been received expressing much satisfaction with the Association's first publication.

The Leicester Conference.—At the Leicester Conference on August 5th, the programme as arranged was carried out to the letter. James Ellis, Esq., M.P., occupied the chair, and Messrs. Rivers, Ingram, Pearson, and Bunyard read the papers announced. Several members of the Association journeyed a considerable distance to be present, and the Conference was attended by over 200 persons, the Chairman being supported by the Mayor of Leicester, Dr. Lankester. A Committee of the Town Council had made the necessary arrangements for the Conference, having placed a large tent at the disposal of the Association. The readers of papers and officials were also entertained at lunch by the Mayor and Committee. Special thanks are due to the Abbey Park Superintendent, Mr. J. Burn, for the assistance rendered in the arrangements of what proved to be a very satisfactory gathering.

The Irish Tour.—In regard to the inspection of fruit culture in Ireland the delegates, Messrs. Castle and Gordon, left Leicester in the evening of August 5th, proceeding direct to Ireland *via* Stranraer and Larne. Investigations were commenced in the counties of Londonderry and Antrim, and continued thence south to Cork and Kerry, taking all the principal districts in the way. They also proceeded to Limerick, and returned to Dublin, where they were received by the Council of the Royal Horticultural Society of Ireland, who have promised every assistance in collecting any further information required to complete the report. The outline report to be presented at the Crystal Palace on September 5th will comprise the chief subjects that will be dealt with more fully in the official report to be published later on. It is only necessary to say here that thousands of acres of fine land suitable for fruit culture were inspected, and that fruits, especially Apples, were good, succeeding even under the worst treatment, from the extreme north to the south; that good culture was seen in a few instances, and the results there were as satisfactory as anywhere in England, and that imported fruit had a large place in the shops and markets of the principal towns, proving the existence of a demand for fruit. The delegates experienced much courteous attention during the journey, and the objects received the hearty approval of all with whom it was discussed.

Sir Charles B. Barrington, Glenstal Castle, Limerick, having kindly consented to become a Vice-President of the Association, was unanimously elected to that office. Votes of thanks were also unanimously accorded to Mr. James Ellis, Dr. Lankester, Mr. Burn, and other officials at Leicester, who have assisted so greatly in the arrangements for the Conference.

The following programme was adopted for the Conference to be held at the Crystal Palace, Sydenham, on Friday, September 5th next, at 3.30 P.M.

SUBJECTS.

Fruits in Ireland, by Mr. Lewis Castle and Mr. George Gordon.

Peaches and Nectarines, by Mr. T. Francis Rivers.

Plums for Market, by Mr. J. Smith, gardener to the Earl of Rosebery, Mentmore.

Cherries for Market, by Mr. G. Bunyard.

Exhibits of Apples and other fruits from Ireland are promised.

The Brighton Conference will be held in the King's Room, Royal Pavilion, on September 11th, at 4 P.M., the Mayor of Brighton in the chair. This will be the second day of the annual Autumn Show under the management of Mr. Edward Carpenter, and a good display of fruit is expected.

[SUBJECTS.]

General Fruit Culture, by Mr. T. F. Rivers.

Grapes for Market, by Mr. J. Roberts.

Tomatoes for Profit, by Mr. W. Iggulden.

Wall Fruit, by Mr. R. Smith.

Members' tickets admit to the Brighton Show and Conference.

GENISTA CAPITATA.

UNDER the above name specimens of an attractive hardy little plant of shrubby habit were exhibited early in the present season at one of the Royal Horticultural Society's meetings, and concerning its useful-



FIG. 25.—GENISTA CAPITATA.

ness there can be no question, whether the name be aptly applied or not. A variety of *Genista umbellata* has been named *capitata*, distinguished from the species by the silky hair clothing the branches and leaves, and said to be a native of Mogador. It was also described as *Spartium capitatum*, and appears to be the plant shown at the meeting in question, and of which an illustration is given in fig. 25. The leaves are trifoliate, the bright yellow flower in compact terminal heads, and are produced freely. The species is a native of Barbary, being found on dry hills. A *Genista* quite distinct from the above has appeared in gardens under the name of *G. umbellata*, which has been assigned a place among the varieties of *G. lusitanica*, a spiny shrub, native of Portugal.

PEACHES AND NECTARINES.

NEW borders must have efficient drainage, the bottom of the border being concreted if the stratum beneath be unfavourable. Gravel free of clay or loam, or an unbinding gravel consisting of pebbles with sand and an eighth of stone lime well burned, form an admirable con-

crete, the lime being slaked and the whole formed into a mortar-like consistence, laying it 4 inches thick and treading it firm. Wide and deep borders are a mistake. The width of the trellis the trees are to cover is quite wide enough for any fruit tree border. To begin with one-third the width of the trellis is quite sufficient. Drains with proper fall and outlet are essential. They should be laid so as to run the water clear of the bottom of the border or the surface of the concrete. Nine to 12 inches thickness of drainage is necessary. The best we find is formed of 9 inches of brickbats or other rough material, the roughest at the bottom, and dwindling to road metal size at the top, finishing with 3 inches thickness of old mortar rubbish, freed of pieces of wood and old laths. So formed the drainage will keep sound for an indefinite period. Twenty-four inches depth of soil is ample. It might be higher at first to allow for settling, but if in good working condition and put together rather firm, settling will not materially affect the depth. The best varieties for very early forcing are Alexander and Waterloo, the latter the higher coloured and heavier fruit. Hale's Early, Early Alfred, Royal George, and Grosse Mignonne are free bearers, and if given proper exposure to light are good in colour, finishing well in every respect. The light coloured Peaches, such as Early Rivers and Noblesse, are not so much appreciated, but there is nothing to equal them in quality. Of Nectarines, Lord Napier is the largest and best of the earlies. Hunt's Tawny colours well, but is small; the quality is very good. Elruge attains a good size, when the fruit is well thinned, and it colours finely under proper exposure.—I.

SEASONABLE HINTS ON FLORISTS' FLOWERS.

Auriculas.—There can be little doubt, I think, that a cold and moist season is favourable for the Auricula. Where the collection is protected from heavy drenching rains the plants are not stimulated so much, and there is not so great a tendency to throw up autumn blooms, a catastrophe the grower always likes to avoid, as his prospects of a good spring bloom is thereby destroyed, the plant that has flowered in the autumn never doing much in the spring. The plants now require simply looking over carefully, all dead leaves to be removed or taken away, and if by any chance there has been a drip on the frames, and thereby the soil in any of the pots has become soddened, they must be removed to another frame where they will be free from it. Should the surface of any of the soil have become green or hard it must be gently moved with a blunt piece of stick. Where offsets have been taken previously they may now be placed into small pots, as thereby their growth into flowering plants will be accelerated. It is probable some of the plants may have suffered from black rot. Where this is the case the best hope of the grower is on offsets. Of late my mind has been much exercised as to the age of Auricula plants. Has any grower ever noted how long-lived an individual plant of any variety is? I have noted in some of the species of Primulas, even in our common wild Primrose, that the plants do die off, and their place is occupied by self-sown seedlings. Is this the case with the florists' Auricula? and if so may not the rot, which as far as my experience goes attacks only the larger plants, be the natural way in which the old plants commit the happy dispatch, and make way for their children? Perhaps Mr. Horner will tell us what his experience is. I only put forward a suggestion, and am anxious really for information. If it be not so how is this plague to be avoided? By the end of this month (September) the plants will have to be moved to their summer quarters facing the south, and it will therefore be necessary as soon as possible to clean fresh putty and glaze the frames, so as to secure the plants from drip during the winter, when it is much more injurious to them, as the wet pots are apt to become frozen. Water will be given more sparingly as the days become shorter and the power of the sun less. It is not well to water all the plants at one time, as some will require it oftener than others, owing to the condition of the roots, and the grower must be guided by his own judgment as to when it is to be given.

Carnations and Picotees.—This has been undoubtedly a very indifferent year for these beautiful flowers, and even where growers have the advantage of a house they have complained, and where cultivation is carried on out of doors either in the open ground or in pots, the cold wet weather has been very trying, and I imagine that this will extend to the layering. The "grass" is somewhat tough and hard owing to the long cold, and it is not likely that they will emit roots so freely as when the grass is in a more healthy condition. Towards the end of the month it will be necessary to take off all the layers that are rooted, and place them either singly or in pans in small pots where the method of growing them in pots is adopted, or plant them out in beds where they are so grown, where plants are in beds or borders, and used only for decorative purposes, for which I do not think the florists' varieties are adapted. If there is no increase required they may be left alone to form large "stools," which will always give an abundance of flowers, the flowering stems having been cut off. The strong growing selfs and yellows are the greatest favourites, and form pretty and interesting clumps, which the more delicately marked and refined Picotees fail to do, and one has only to see how the old Cloves are left in many a cottage garden to see how admirably they succeed when let alone.

Gladioli.—There is little to be done now but enjoying the results of previous work, and if they have been properly staked and tied they will require but little more unless the grower be ambitious to exhibit, when they will need to be shaded. There is no doubt that a moist cool season such as we have had suits them, and should it be succeeded by a dry autumn the corms ought to lift well and be of good size. If seed is

required it would be well to cross the varieties, and no flower is more easily operated upon, but it will be well to fertilise only one or two flowers on a spike and pull all the rest off. Where seed is not required the flowering part of the plant should be cut away, so as to allow all the vigour to be thrown into the corm—in fact leaving it to perform only one operation at a time. We shall require a dry autumn, as the corms are pretty sure to be full of water after such a season as we have experienced.

Pansies.—It will now be time to pot these, and it is only in this way that we are able to grow them in this part of England. I always plant mine out after they have finished flowering, and at this time take them up and divide them, putting them into small pots, and so keeping them through the winter. Where cuttings have been taken they may be potted in like manner, placed in a cold frame, kept close for a few days, and then given all the air possible. They should be kept moderately moist, but damp should be guarded against. The simpler the soil the better, as it is not desirable to stimulate growth so much as to promote root-action during the winter.

Roses.—It goes rather against the grain, even for an old-fashioned florist, to class the Rose amongst florists' flowers, but I suppose we must do so. Notwithstanding all the wet we have had, it has been so far a fine time for autumnal blooms, though it seems hard to class August amongst the autumn months. We have had splendid weather for Hybrid Perpetuals, and I have seen as fine blooms as are often seen in the full height of the season; and how lovely the Teas are! and what an unfailing supply of beautiful blooms they give! There is not much that they require now save forethought for the time that is coming. If any alterations are to be made in the Rose garden they ought now to be planned, so that when the time comes they may be carried out without delay. Some growers recommend—and I have tried it for the last two years—to treat them as we do Raspberries—cut out all the wood that has bloomed, and which would have to be cut away in spring, so as to allow a free current of air and plenty of sunlight to get access to the plant and so ripen the wood. This saves, too, the work in spring, when there is so much to occupy our thought and time. When the new shoots of the year are very long they should be topped, and a stake put to them, so that they are not "wobbled" about by the wind. Now will come the time, too, when the result of notes taken during the summer will bear fruit in orders to "the trade," so that next month they will see the arrival of the packages which so delight the grower with fond anticipations of future pleasure.—D., Deal.

NOTES ON STRAWBERRIES AND PEACHES.

LOXFORD HALL.

THIS appears to be a good late variety as far as cropping and flavour are concerned, but its pale colour is objectionable on the dessert table. I have seen this year several good dishes of fruit, but none good in colour.

WATERLOO.

At the late Southampton Show, held on August 2nd, an excellent dish of this Strawberry was exhibited, thus proving its value as a late sort, as Strawberries at that date so far south of England are rather rare. Its flavour too is pleasing; the growth is good, although runners are not freely produced, as in some varieties.

SIR JOSEPH PAXTON.

In recent issues of the Journal I was pleased to see this variety so highly spoken of. It is good in all seasons, and the best wet weather variety we have. The flesh being fine it is less affected by rains than most others. The Captain possesses this quality also, but as this is a shy bearer it will not be nearly so largely grown as Sir J. Paxton. This latter variety—"Joes" as they are called by the market men—is extensively cultivated in Hampshire for supplying the London, Manchester, Birmingham, and Glasgow markets. Several hundred acres of it are grown; indeed with the exception of a few Noble and Alice Maud, which are planted for earliness, "Joes" form the entire crop. When I say that as many as sixty tons have been sent away from Botley Station in one day it will give an idea of the numbers cultivated. The travelling qualities of Sir Joseph is improved by gathering the fruit just before it ripens. This is found the best plan, as in warm weather the fruit "colours up" during the journey. A little more than the ordinary distance of 2 feet is required in planting, as in suitable soil the growth is robust. Early planting of the runners is a decided gain. The best plants are those which have been layered into 3-inch pots at the beginning of July, and planted before they become root-bound. The difference between early planting, say in August, and that of deferring it until March will be seen in the crop produced the following season. In this district (Hampshire) fruit of this variety is ready to be gathered in quantity about the 10th of June.

STRAWBERRY RUNNERS.

When runners are obtained from a distance, some perhaps having but few roots, the best plan is to establish them in 3-inch pots in a compost of loam and horse manure, about half of each, standing them in a cold frame, which should be shaded from bright sun for a few days. Directly the pots are full of roots plant out. By the little extra attention much time is gained. If the roots arrive in a dry state they should be placed in water for a few hours; and if the soil be moist, as it ought

to be when potting, but little water need be given to the plants for a day or two.—E. M.

PEACH SEA EAGLE.

It is not often this variety is had ripe so early as the beginning of August. At the Southampton Show, held the 2nd of the month, Mr. Iggulden staged two capital dishes of it there, both being highly coloured fruits of large size and excellent flavour for the variety, which is not looked upon as being one of the most noteworthy kinds in that respect, although it has a commanding appearance, and well worth attention as a late variety.—E.

PEACH BARRINGTON.

So fine was this Peach exhibited at Southampton Show August 2nd, that many gardeners doubted its being that variety. The fruit shown there by Mr. Allen were large, round, and of magnificent colour, and easily secured leading position in the class for one dish of Peaches. Given plenty of light this variety does colour well, and in that manner is one of the best Peaches we have for midseason use.—M.



EVENTS OF THE WEEK.—On Friday and Saturday, September 5th and 6th, the Fruit Show and the National Dahlia Society's Show will be held in the Crystal Palace, Sydenham. The British Fruit Growers' Association will hold a Conference in the south saloon of the Crystal Palace on Friday, September 5th, at 3.30 P.M., when the subjects for discussion will be "Fruit in Ireland," "Peaches and Nectarines," "Plums and Cherries for Market." On Tuesday, September 9th, the Royal Horticultural Society's Fruit, Floral, and Orchid Committees will meet in the Drill Hall, James Street, Westminster. The early Show of the National Chrysanthemum Society will take place on Wednesday and Thursday, September 10th and 11th, at the Royal Aquarium, Westminster, early Chrysanthemums, Dahlias, and Gladioli being the chief features. The Floral Committee will also meet at 12.30 P.M. The Brighton Horticultural Society's Show will also be held on Wednesday and Thursday, September 10th and 11th, in the Royal Pavilion; and on the second day (September 11th) the British Fruit Growers' Association have arranged for a Conference in the King's Room at 4 P.M.

— **THE WEATHER** has given some earnest indications of approaching autumn. On several mornings frosts have been experienced in the metropolitan district, Dahlias and Vegetable Marrows being much injured in low and exposed situations.

— **A DEPUTATION** of the NATIONAL CHRYSANTHEMUM SOCIETY met Lord Brooke, M.P., President of the Society, at Anderton's Hotel, Fleet Street, at 2.30 P.M. on Wednesday last, September 3rd, to discuss the arrangements for the Centenary Exhibition Conferences and banquet, to be held at Westminster on November 11th, 12th, 13th, and 14th, 1890. Mr. R. Ballantine was in the chair, and the members present were Messrs. W. Holmes (Hon. Sec.), J. Laing, Lewis Castle, G. Gordon, and Briscoe Ironsides. A full and interesting programme was adopted for recommendation to the General Committee. It was thought advisable to have an opening ceremony and a conference on the first day; the second conference and banquet on Nov. 13th. A conversazione, with distribution of prizes and closing ceremony, on Nov. 14th. The programme will be considered in all its details at the Committee meeting in Anderton's Hotel on Monday next at 7 P.M.

— **ROYAL HORTICULTURAL SOCIETY.**—Questions having been asked as to whether fresh fruits may be shown at the forthcoming Exhibition of Preserved Fruits, Jams, &c., to be held by the R.H.S. in the Drill Hall on Oct. 14th, 15th, 16th next, it may be as well to call the attention of intending exhibitors to the following decision of the Council:—"Any new or rare fruits submitted to the Fruit Committee will be heartily welcomed, but there will not be room for general collections of fresh fruit. The Show will be exclusively of preserved fruits, with the exception of novelties in flowers and fruits sent for the judgment of the Committee." The jams and other preserves are to be as far as possible in glass vessels or "packages," although other materials are not absolutely prohibited. At the Grape Show at Chiswick a silver-gilt cup will be awarded in Class X. for the best examples of packing Grapes, 4 to 6 lbs., for private use, to be sent by post or rail.

— **POSOQUERIA LONGIFLORA**, though not very useful in a decorative point of view, is very fragrant. A plant in a stove or a warm Orchid house fills it with fragrance in the same way that the *Boronia megastigma* does in the greenhouse, but of course the perfume is different.—O. U.

— **HELICONIA AUREO-STRIATA** is out of the run of ordinary variegated stove plants, but nevertheless it is still worthy of cultivation in the best garden where stove plants are grown for decoration. We grow it in equal parts of loam and peat, and well exposed to the light, but not direct sunshine.—Y. G.

— **APPLE STIRLING CASTLE.**—In a scarce Apple year like the present it is as well to notice which varieties have come through the ordeal the best. Stirling Castle is laden, whilst other varieties are almost bare. This Apple should be planted on the Crab stock, as on this it fruits most profusely, too much so in fact. It is useless to plant it on dwarfing stocks, as the trees grow so scrubby.—Y.

— **LIKE** many other old plants *GLORIOSA SUPERBA* is coming to the fore, but why it should have been banished I am at a loss to understand, as what trailing stove plant could be more beautiful during the summer months? We grow it along the light iron supports in the Cattleya house. There are evidently good and poor varieties even of the variety *superba*. The variety we have is the best I have seen.—A.

— **HYMENOCALLIS MACROSTEPHANA** somewhat resembles *Pancratium fragrans*, but is far preferable in every way. The flowers are delightfully fragrant, and more massive than the *Pancratium*. I believe it is scarce; at least it is very seldom seen. It is of the easiest culture, but thrives better in a rather high temperature and moist atmosphere, and must also be heavily shaded. When exposed to the sun the foliage gets scorched. It will also thrive under the shade of other plants.—O.

— **THE** handsome **NEW CUCUMBER** which attracted so much attention at the Reading Horticultural Society's Show on August 27th was awarded a first class certificate of merit in addition to the first prize for the best brace of Cucumbers. It has had first class certificates at the Royal Horticultural and Royal Aquarium Shows this season, and we learn that Messrs. Sutton & Sons, Reading, have purchased the entire stock of seed of the raiser, Mr. Mortimer, and will distribute it during the coming spring.

— **PLATYCODON MARIESI.**—This somewhat scarce plant is now flowering well in this district. Considering its distinct character and unique buds and flowers, it is remarkable it is so seldom seen. Its requirements appear to be few. Here it is simply growing in ordinary soil on a sloping bed on a lawn, and with great freedom. It is about 18 inches in height, the leaves and stems intensely glaucous, and the flowers of a deep purplish blue, and of some substance, and altogether a desirable plant for the hardy flower garden.—S.

— **A TIMELY HINT.**—Having had early frosts the last two or three years it will be wise for northern growers of Chrysanthemums to be on their guard this year, and as some perhaps have not convenience for protection without housing, which in the latter part of September is rather early (for certain purposes), I would suggest pieces of old newspapers, made in the form of small cones, and drop one over each bud at night. If there is any indication of frost, of course, it would not be practicable for bush plants, but for those grown to produce large blooms.—J. T. P.

— **I CONSIDER GESNERA EXONIENSIS** is the most useful of all the Gesneras, as it is admirably adapted for winter decoration, especially when it can be shown in the dining or drawing-room by either gas or lamp light, as then its beauty is fully brought out. The details of culture are simple, yet these must be rigorously carried out, or poorly grown and badly coloured plants will be the result. The best position is in a close, warm, and moist pit or stove, where they may be shaded from sun. Water must not be allowed to fall upon the foliage, but it can be freely supplied about the stage amongst the pots and on the floor. The compost I have found most suitable consists of equal parts of loam, peat, and leaf soil, with a good addition of sand and charcoal broken fine. Whilst in free growth care must be taken not to allow the soil to become dry. As the foliage decays, dry and store the roots similar to *Gloxinias*. In our case the roots were started a month since; these were removed carefully from the old soil, and arranged in a box of soil. They soon started into growth; they are now potted into large 60's, and will even-

tually be placed into 6-inch pots. If extra large plants are desired 7 or 8-inch pots are not too large. The best plants I ever saw were grown in a propagating house.—A. YOUNG.

— SHARPE'S QUEEN PEA.—May I add my testimony to that of your correspondent, Mr. Lumsden, on page 159, in favour of the above Pea? I can fully endorse all that he says in its favour. Coupled with its sturdy growth and free-bearing qualities, it has the power of retaining its flavour when we should consider it absent in some varieties; in fact I consider it the best flavoured Pea. To anyone on the look-out for a good Pea let me advise them to give Sharpe's Queen a trial.—R. PINNINGTON. [Messrs. Sharpe have sent us some samples of this Pea which fully bear out all that has been said about it. The pods contained nine and ten fine peas each]

— THE WEATHER IN SHROPSHIRE has been very cold this last week or two, especially at night. On Thursday night last I had some Gourds cut down by frost, and on Sunday morning 3° were registered. We had hail on several days and very heavy rain. On the first Saturday morning in August we had 2° frost registered, but I may say that our gardens catch all the early frosts, as we are rather low lying and damp. Fruit crops this year are very poor; many large orchards have no fruit at all in them, and Plums are very scarce. Apricots are a poor crop with us, but outdoor Peaches are good, and will be if we can get a few fine weeks to ripen them. They are late, as I have picked none from our trees yet. I have never seen such a crop of Hazel Nuts in the woods and hedges, all the bushes being loaded.—JOHN ETTLE.

— STRAWBERRIES.—I have been much interested in Mr. Meehan's remarks on the Strawberry, page 162, and my own experience has proved them to be correct. If more Strawberries were planted in the shade they would be less troubled with spot, red spider, &c. Fresh plantations would not be required so often, the fruits would be more numerous, and the quality much better. This season our heaviest crop was gathered from Elton Pine, planted about seven years ago by the side of a line of Pear trees. In other parts of the garden we have the same variety two, three, and four years old, but the crops did not equal those shaded by the trees in abundance, size, or flavour. I could give more instances, but I choose this one on account of the age of the plants, which I think will be sufficient to corroborate Mr. Meehan's statement that in a shady place the Strawberry feels most at home.—A. SCOTT, Rathmore, Belfast.

— NAMING FLOWERS AT EXHIBITIONS.—Is it possible for an exhibitor to place a name on a variety that has not yet been named? Surely the Judges in Mr. H. Elliott's case went beyond their duty. He (Mr. Elliott) so far named them as to call them "seedlings." This sort of disqualification greatly annoys young exhibitors. The object of naming is certainly that other exhibitors may procure the varieties. In the matter of "seedlings" that could not be done. Even when the rule runs that each bloom must be "correctly named," how difficult it is for the young exhibitor to do this. Often, very often, the plants are sent out under a wrong name, and this is wholly an accident. How can the tyro know whether the name be correct or not? He must trust the seller, who, through no fault of his own, may yet send the wrong variety. Then often the name is just placed in front of the bloom, and if a gusty day, it may be blown away before the judges visit, or by the manager of the tent moving the stands. This always appears to me a regulation that should only be acted on when it is evident that the exhibitor has paid no sort of attention to it, and the whole stand is nameless. It is not easy to frame a regulation, any more than an Act of Parliament, without flaw, and most have to be acted upon less rigidly than as printed. In my opinion Mr. Elliott has been hardly treated.—Y. B. A. Z.

— CARNATIONS AND PICOTEEES.—No time should be lost in preparing stock for another year. They can be layered, or cuttings may be taken with a sharp knife. The latter should be cut to about the fourth joint, inserted in 5-inch pots of light sandy soil, plunged in an old Cucumber or Melon bed, shaded from hot sun, and gently syringed twice a day. They will form roots in three weeks or a month, when air should be admitted gradually until the lights can be removed. When sufficiently strong they should be placed singly into large 60-pots, and arranged in a cold frame and kept close for a few days, air being admitted as previously advised. They will make good plants by the spring, when they should be placed into 6-inch pots in a compost of two parts loam, one part leaf soil, one part sharp river sand, or planted out in beds as they are required. Layering is easily performed where time can be spared; the plants having been cleared of

all old flower stalks and weeds removed, the soil around them should be loosened and some fresh added. The shoots selected should be denuded of their leaves at the base of the stem. A slit should be cut in an upward direction, so as to form a tongue, which should be pegged firmly in the ground and covered to the depth of an inch, care being taken to see that the tongue and main stem be separated. They will root in about a month or five weeks. After layering, some soil should be drawn up to them, so as to form a sort of basin, and supply water when the soil is dry. When rooted they can be removed from the old plants, and, potted or planted as stated above, they will make useful plants to flower next season.—B. B.

THE CYCLAMEN.

THE best method of growing the Cyclamen to a high state of perfection is to treat it as an annual. It is a common practice to sow the seed for the year's supply during the early months of the year, and then forward the plants in brisk heat for some months. Fair results may be accomplished by this system, but the utmost care is necessary to avoid a check to the young plants or prevent their foliage being drawn. Even if these evils are overcome plants in 4-inch pots only can be produced by the end of the season.

Sow the seed at once, so that the plants have before them twelve to fifteen months in which to develop, and there is no difficulty in having large plants that will produce scores of flowers each, and prove highly ornamental in any position. Sow the seed evenly on the surface of fine soil in well-drained pans, a layer of leaf mould being placed over the drainage, and then a compost of loam and leaf mould in equal proportions, with the addition of sand. If the soil is suitably moist, and the pan can be plunged, covered with a square of glass and shaded, no water will be needed before the seed germinates. The pan should be placed in a temperature of 60°, and the young plants gradually exposed to the light and air of the house by the time their first leaf is developed; they should then occupy a position close to the glass, where the temperature at night will range 5° lower.

When large enough transplant the seedlings about 1 inch apart in pans, where they should remain until large enough for 2-inch pots. They must not be crowded before they are potted singly. To prevent the soil drying too rapidly in the small pots, plunge them amongst sand, fine ashes, or cocoa-nut refuse on a shelf close to the glass. If the night temperature during the winter does not fall below 50° they will grow sturdily and be stiff little plants not more than 1 inch high by the time they are ready for larger pots. The crown of the young plant should be just above the surface of the soil when transplanted from the seed pan, and also when they are potted.

The next shift must be into 4-inch pots, using the same compost. This time the pots appear to be large for the plants, but with good treatment the latter will soon develop large leaves and plenty of roots. In this size it is often difficult to accommodate them on shelves; in fact they are better stood together in a low house, where they can enjoy a moist base, such as ashes afford. Unless very carefully attended to shelves prove too hot and dry.

The next shift should be into 5-inch pots, and in these the plants will develop into strong flowering plants. The largest and strongest when ready may be placed into pots 2 inches larger. If the plants have been kept growing the last shift should take place about the end of August or the first week in September. When placed into 5-inch pots the soil must consist of loam three parts, one part leaf mould, one-seventh of manure and sand. The soil must be pressed more firmly into the pots than was the case at the earlier pottings.

From the time the seed germinates the soil about the plants must never be allowed to become dry. This is one of the mistakes that is often made, and the plants are seriously checked in their early stages. Abundance of water is needed both at their roots and over their foliage. Even after flowering they should not become dry if any of them are to be retained for flowering again. Very frequently old plants after flowering are ruined by carelessness in supplying them with water.

When the plants have been fully exposed to light in the house in which they are raised no shading will be needed before they are placed into 5-inch pots, and only then if the weather proves exceedingly hot and bright. Cyclamens are frequently shaded too much, and the foliage becomes drawn in consequence. When ventilation is liberal and the sun bright, syringing and damping the house will prevent injury from flagging.

Little ventilation will be needed during the early stages of the plants' growth; but from the time they are established in 2-inch pots air should be admitted whenever favourable to maintain dwarf compact growth. The ventilation must be gradually increased as

the days lengthen and the plants increase in size until cool airy treatment can be given, which is necessary from the time they are placed into 5-inch pots. During the early growth of the plants the house should be closed early in the afternoon, while later in the season the ventilators may remain open at night.

If *Cyclamens* are kept growing and the syringe freely used insects are not a source of trouble; but if the soil about the roots and the atmosphere of the structure become dry aphides increase, but are readily destroyed by slight fumigations with tobacco. Although a moist atmosphere is necessary a stagnant one must be avoided, or their beautiful foliage will damp and thus give the appearance of disease.—W. BARDNEY.

PHOSPHORUS.

THIS chemical element "is never found uncombined in nature, but always in combination with oxygen and a metal (chiefly calcium) as a metallic phosphate. Apatite, phosphorite, and coprolites are minerals composed chiefly of calcium phosphate."—("Murby's Inorganic Chemistry," p. 148). Apatite is a compound of phosphate of lime with fluoride and chloride of calcium, forming in Spanish Estremadura whole beds alternating with limestone and quartz. It is imported into this country, and used for the same purpose as bones—namely, to enrich the soil with phosphoric acid. Phosphorite consists essentially of phosphate of calcium. Coprolites are the fossil remains of extinct animals found abundantly in the lias, greensand, and Suffolk crag. Their constituents are chiefly phosphates of calcium and magnesium, carbonates of those, and some organic matter. They possess well-known fertilising properties. Reduced to powder they are used as ground bones, treated with sulphuric acid they form superphosphate of lime. Those are some of the sources from which phosphorus or phosphoric acid is derived, but principally, as a fertilising agent, from bones consisting of calcium phosphate. Animals derive their substance from plants, these take it from the soil, in which it exists in small quantities, and soils are derived from the primitive rocks by disintegration.

Phosphorus, combined with other elements, exists in the brain, the blood, and all the soft animal tissues, therefore is one of the essential chemical elements found in all living subjects. Uniting with oxygen it cannot remain unchanged when exposed to the air, therefore always occurs combined with other elements.

Of the use of phosphorus to plants little is known, its uses not being determined with much certainty. It is considered that it acts not only in building up, but in energising the actual living substance of plants as well as animals—viz., the protoplasm, and is the principal agent in the transference of the living principle or the protoplasmic substances from the formative cells to those in which they are to be employed, whether those obtain in old tissues or the formation of new. Phosphorus on these premises is the energiser if not the inductor of the living substance in plants. These derive it from the soil, where it exists combined with other elements, the principal source of supply being phosphates of lime. These differ in the per-centage both of phosphoric acid and calcium. Some limestones contain as much as 7 per cent. of phosphoric acid, others scarcely a trace, and their value depends on the solubility in water. Phosphorus, however, seems to be inseparable from lime, at least those elements—viz., calcium and phosphorus—are found in the ashes of all plants in greater or less degree.

Soils deficient in phosphoric acid cause a dwarf and stunted growth, which on the application of phosphatic matter is relieved, the plants are rendered vigorous and healthy by the presence of this essential element in their food. Lime or calcium supplies plants with sulphur and phosphorus from the sulphate and phosphate of that substance respectively, and equally important with that or the basic element—viz., calcium combined. Calcium neutralises acids, not only in the soil but in the plants; oxalic acid forms largely in the tissues of growing plants, and is injurious when it is in excess; lime of itself forms nitrate of that substance when applied to soils, and it is believed that bacteria remaining inert amid vegetable acids are on lime being present to neutralise the acids made active, and the lime through their agency is changed into nitrate. Lime on entering the plant tissues combines with the oxalic acid forming oxalate of lime, which is not injurious, therefore neutralising acids in soils by lime dressings converts their poisonous elements into nutrition of a wholesome nature, and prevents the acids formed within the plant becoming injurious.

Oxalic acid combines with magnesium, forming an insoluble salt or oxalate of magnesium; but when this substance is in excess the salt is reacted upon, and becomes soluble, or partly so, the acid acting with increased energy injuriously on the plant tissues. Oxalic acid also combines with potassium, and forms oxalates, but these are of two kinds—viz., a neutral and a supersalt, and practi-

cally do not neutralise or render the acid innocuous. This combines with sodium, but the oxalate is dissolved by sulphuric acid, the decomposition resulting in free oxalic acid. Ammonium or ammonia is neutralised by oxalic acid, so that ammoniacal, potassic, and sodic elements are not antiseptic. Calcium completely exorcises oxalic acid, eliminating and converting it from an injurious to a perfectly harmless if not beneficial and essential substance. So strong is the affinity of oxalic acid for lime that it separates it from all other acids unless they are present in excess, and forms with it an insoluble salt—viz., oxalate of lime.

Oxalic acid is formed by potash and soda acting on vegetable matter or humus. The salts or oxalates resulting are decomposed by sulphuric acid, whereby free oxalic acid is obtained, but these oxalates must first become calcium salts; in fact it is from sodium oxalate that the calcium salt is formed, which decomposed by sulphuric acid liberates free oxalic acid. Therefore, the remedies for plant poison or an excess of oxalic acid are potash, soda, magnesia, and lime. These are most active when acted upon by nitric acid—that is, they are most stimulating to vegetation when applied to soils in the nitrate state. This is found in practice to produce the evils it is desired to eradicate, as a superabundance of potash and sodium have no neutralising effect on free oxalic acid, consequently these do not subdue its virulence in plants liable to fungoid attacks, but aggravate gum in the Apricot, Cherry, Nectarine, Peach, and Plum, unless they also are neutralised by sulphur, or there is lime neutralising the oxalic acid simultaneously counteracting their inducements to the formation of the virus. Instead, therefore, of administering nitrates of soda and potash, chloride of soda and muriate of potash are found most conducive to health and fertility when the tendency to disease is induced by sappy growths, and imperfect setting and stoning of the fruits of the trees named.

Now we have some palliation, and singularly enough an acid—viz., hydrochloric. Chlorine or chloride of soda combines directly with hydrogen (that is produced where there is an excess of organic matter in soils), forming hydrochloric acid. This is also produced by application of salt or sodium, and the acid so formed has the property of rendering silica soluble. This substance passes into plants by their root hairs, is broken up by oxalic and citric acids in the plant tissues, forming new compounds, whilst silica is set free in the sap, and is added to the walls of the cells, whereby they are hardened, especially the cuticle, and the plant is better able to resist attack by fungi. It also prevents the softening sappy tendency of nitrates on the plant tissues. In lime we have sulphur, but its uses to plants are not known, or uncertain. It is, however, considered essential to living beings, and is absorbed by the roots of plants from the soil in sulphate form. It seems that sulphates are broken up on contact with oxalates, organic compounds built up into protoplasm, sulphur being an element always present in the living substance. Sulphur in sulphate form is, therefore, an antidote internally, and sulphides externally of plant diseases of the fungoid character.

All the substances named are essential to plant life, but their benefit depends on the maintenance of a certain equilibrium between opposed and equally energetic forces. If oxalic acid is not converted into oxalates decomposition of another kind sets in, which results in disease and death. This is the case in gum; it is the case in canker. The former was long considered referable to errors of culture, or unsuitability of soil and climate. Those undoubtedly have a predisposing tendency to render the plant tissues assailable by the fungus, and it is useless attempting to avoid its attacks by any external means without first inducing health in the tree liable to attack.

Nitrates are useful in accelerating growth where there is weakness, and with their base forming their respective oxalates with oxalic acid, yet they are liable to induce grossness, whereby plants are rendered more easily permeable in their tissues by fungoid germs. Muriates and sulphates have an invigorating and at the same time a counteracting effect on plants. Muriate of potash whilst stimulating the living substance liberates silica, hardens the cell walls, energising the protoplasmic molecules, whereby health and fruitfulness are assured; alien matters are utilised or eliminated, if not actually expelled. Sulphates contain the essential sulphur, but the counteracting or building up principle is less pronounced; indeed an excess of sulphuric acid appears to react on itself or frustrate the object for which that it is combined with is applied. None of those objections arise when the base is lime. In any form it is highly antiseptic, especially when combined, as it is more or less, with the protoplasmic energisers sulphur and phosphoric acid. It neutralises oxalic acid, forming it into an insoluble oxalate, eats up the free acid of the Apple and Pear, and prevents saccharine and starchy substances from being converted in the stone fruits into gum.

Lime is more valuable still as a source of phosphorus. Soils generally contain, as before stated a small quantity of phosphates

of lime. These are removed with crops, hence arises the necessity of affording new supplies. The principal sources of phosphates are bones and coprolites. They would not be soluble in soils if these did not contain acids, whereby the bones and coprolites or other mineral phosphates are slowly decomposed. The quantity rendered soluble is not such as to meet (unless the phosphates abound in large quantity) the requirements of plants grown for their crops. For special purposes ground bones and coprolites answer, also partly broken, crushed, or other descriptions of bones answer for fruit borders, but these forms, though lasting, are hardly up to the times. Indeed so uncertain is the supply of phosphoric acid by the use of whole or ground bones and coprolites, that to prevent waste in the plants having to liberate it by their roots or the acid they give off, that it is desirable to afford this substance, for economic and certain supplies, in a soluble form. This is effected by converting the phosphates into superphosphates by an acid, usually sulphuric, which readily dissolves in water, and plants obtain it in quantities suited to the current requirements.

The principal matter on which the application rests is that in superphosphate the plants are immediately provided with calcium, sulphur, and phosphorus. All are of the greatest value to plants, especially fruit trees. Phosphorus, however, is the great factor to be reckoned with in their health and fruitfulness. Applied to the soil, its first important business is to encourage root action, especially surface roots. These soon show the result in the leaves. They do not send up matter which causes the leaves to become larger as from potassic, sodic, and ammoniac applications to the soil, but they transmit the living substance, the building up principle, the leaves become stouter, harder in texture, and enlarge the useful part or fruit, not the least of the benefits being the acquiring by the leaves of the colouring matter or chlorophyll, which the plant seems capable of storing in the wood. By some unascertained process the chlorophyll, in the ripening of fruits, give them their mature colour as well as that they have up to the ripening period, the finish of all fruits depending as regards colour on the amount of chlorophyll stored in the plant or present at ripening, and available for conversion from the intensest green into the glowing purple of Gros Colman, or the rich amber of Muscat Grapes.

On these grounds phosphatic manures seem best suited to the requirements of fruit trees, and are advised as remedial of ill health and sterility.—G. ABBEY.

ACACIAS.

THESE are among the most easily cultivated of greenhouse plants. Some have a tendency to make long straight shoots; these are very suitable for training up pillars or upon rafters in conservatories, where they form grand ornaments in the late winter or early spring months. The most handsome in this respect of all the species is, perhaps, *A. Riceana*. Its graceful slender growths, depending like a Weeping Willow, rendering it singularly effective for training to a pillar or arch in a conservatory. Its pale yellow flowers produced in long solitary spikes from the axils of the growths in spring are very distinct, the foliage being deep green, linear, whorled, or scattered, so that whether in or out of flower it is a very effective plant—indeed one of the finest for pillar, arch, or roof covering in conservatories. The next for pillar and roof covering that I have seen has the name of *A. mica*, which, however, I cannot find enumerated in any list of plants. It makes somewhat slender growths, glaucescent, and produces pale yellow flowers in racemes very abundantly, having a very handsome appearance in spring. *A. oleaefolia elegans* also is a good pillar plant, and *A. longifolia magnifica*, with its deep yellow spikes of bloom, is one of the best for the same purpose. *A. juniperina* and *A. pubescens* may be mentioned as useful for low pillars. Occasionally the straight branched kinds, as *A. lophantha*, *A. dealbata*, &c., are seen trained to roofs, which is quite unsuited to them. In no place do the tall spreading Acacias appear so well as where they can display their growth—the foliage being really handsome in these last enumerated—as a position in a winter garden or conservatory planted out. But these plants have one great defect—their closing their leaflets at night, which is fatal to their employment in some conservatories.

Most of the species, however, are suitable for growing in pots, or large specimens may be grown in tubs as bushes or pyramids.

Acacias are very floriferous, but they need full exposure to light to insure the thorough solidification of the growth. Plants kept under glass through the summer, where they necessarily have to make their growth under the shade of climbers or a shaded roof, are not nearly so satisfactory as those placed outdoors from early or mid-June up to mid or late September. Without this accommodating nature they are hardly suitable for small houses, for whatever may be their heights described in lists, the plants generally much exceed the proportions accorded them. *A. pulchella*

described as growing 2 to 3 feet high. I have had it make fully that amount of growth in one season. There is one thing, however, about Acacias that renders them more accommodating than other plants, and that is their bearing cutting well, and this means their being kept young and fresh-looking in moderate-sized specimens.

The best time to prune Acacias is immediately after flowering. The principle, however, to be adopted is laying a good foundation by pinching and attention to pruning in the early stages, which, as most of the plants are raised from seed, requires an effort, as the ambition of most growers is to get a large and early flowering plant as soon as possible. The plant must be headed early if it is to have a well-furnished base. The strong growth will monopolise all the sap, and so much so as to impoverish the weaker growths, whilst usually the most floriferous succumb. This must be prevented by cutting back the strong growths and so equalise or distribute the sap, causing, as far as practicable, an equality of growth. The pruning may be to the old wood, but the growth will neither be so free nor desirable as from growths of the previous year. In fact, when an Acacia becomes old, bare, and tall, it is best to discard it altogether, and others should be grown to supplant it. The pruning in most instances will be confined to shortening strong growths and irregularities, and cutting out weakly and dead wood, so as to have a compact, sturdy, well furnished specimen. This if done as the plants cease flowering will keep them in useful form for a number of years. They should be kept rather drier after pruning, and when fresh growth is being pushed they may be potted, merely loosening the sides of the ball, and transferring to pots a couple of inches larger, draining well, and in potting making the soil as firm as the ball. Three parts turfy loam of a friable nature, with a third of leaf soil or fibrous peat and a free admixture of sand, will grow them well. Water carefully, and damp overhead morning and afternoon until the roots have taken to the fresh soil, when as the growth advances they will require more copious supplies of water.

In June, as before stated, the plants may be placed outdoors in a position fully exposed to the sun, but sheltered from winds. The pots should be stood on a concreted bottom or a good thickness of ashes, and be plunged to a little of the rim in that or similar material, allowing space between the plants for the free access of light and air. Copious supplies of water will be necessary, never allowing them to lack it, nor giving any until it is required, always affording it so that the soil is moistened to the drainage. In these quarters they will make clean healthy growth, ripening the wood perfectly, and that when that is effected a full amount of bloom may be expected. In hot weather a good syringing in the evening will be useful in cleansing the foliage and preventing attacks of red spider. The plants should be housed at the end of September or early in October, assigning them a light airy position in a house with a temperature of 40° as a minimum, and 45° to 50° as a maximum from artificial heat, in which they will flower in due season. An effective display will be assured of what are at least showy plants, and though not as durable as many the sprays are useful in a cut state, the yellow balls or spikes, as the case may be, enlivening otherwise formal arrangements. They are also brilliant for decorative purposes indoors, and are in no way injured, even where there is gas, by a brief sojourn in corridors, halls, &c.; of course they cannot well be used in places that have a pale white or yellow ground, but they tell well against a ground of green or blue.

Acacias, though of the freest and easiest culture, cannot bear water-logging. If ever the soil gets sodden and sour the plant will lose its roots, and it will seldom if ever recover. *A. oleaefolia elegans* is one of the most difficult in this respect. *A. Drummondii* may also be mentioned as one that does not endure a sodden condition of the soil.

Propagation is readily effected by seeds, which are best sown as soon as ripe, or they may be kept until spring, using fibrous loam with a third leaf soil or peat, or the seeds may be sown in sandy peat. Cover about a quarter of an inch deep, more or less according to the size of the seeds, their diameter being a proper depth, and place in a house with a temperature of 55° to 60° artificially, and when up keep close to the glass to prevent drawing. Pot the plants when they are showing the second leaves, and keep in the same temperature well up to the glass until established; then remove to a cooler house or pit, where the plants can be grown sturdily. Shift into larger pots as required, but avoid overpotting, and pinching-in irregularities bushy flowering plants may be had in about three years.

The freer-growing species, or those grown in quantity for sub-tropical work, as *A. lophantha*, *grandis*, and *dealbata*, make fine decorative plants the first year if sown early in February, grown on in gentle heat, and planted out early in June, and in good rich soil. Those grown under glass being shifted into larger pots as required, and not suffered to lose the lower leaves through lack of

water or being too crowded, make useful plants for greenhouse or conservatory decoration during the winter, and are useful for decorative purposes indoors. They, however, require light

decorative purposes care must be taken not to overwater, especially when in cool places, from which frost is barely excluded.

Propagation is also effected by cuttings of the half-ripened



FIG. 26.—ACACIAS.

1, *A. cordata*; 2, *A. pulchella*; 3, *A. verticillata*; 4, *A. Drummondii*; 5, *A. armata*.

situations, sometimes being seen flourishing in a light window of a sitting room for months or years, whilst those in the dark recesses of corridors or halls have collapsed. When used for

wood, taking it off with and inserting with a heel, root freely during the summer. Drain the pots well, and fill to with three-quarters of an inch of the rim with peat and sand in equal parts,

surfacing with half an inch of sand, making thoroughly firm. Insert the cuttings at once, water well, and stand aside for a short time to dry, then place in a close frame or cover with a bellglass, shading and watering so as to prevent flagging. They do not require heat, rooting as well or better in a close pit or house without heat. Pot when rooted, and keep in a close pit or house until well established.

Some of the most desirable for pot culture are the following:—

Acacia cordata, fig. 26 (1).—A very distinct and graceful species, having long, slender, but slightly branching stems, densely clothed with leaves and flowers. The latter are in very small globular heads, creamy white. The leaves or phyllodes are cordate, angular, and with a tapering point.

A. pulchella, fig. 26 (2).—One of the most beautiful of the Acacias, as it is extremely floriferous, with showy flowers. The plant is of spreading habit, with small pinnate leaves three-quarter inch long, the pinnæ narrow. The flowers are in globular heads, half inch in diameter, bright golden yellow, and slightly fragrant. They are borne on slender peduncles, 1 inch long, solitary on the axils of the leaves, but produced very freely all over the plant.

A. verticillata, fig. 26 (3).—Tall growing, of somewhat cylindrical habit, the dark foliage and stem contrasting with the soft yellow flowers. The leaves or phyllodes are half inch long, very dark green, narrow, sharp, and arranged six or eight in a whorl. The flowers are in a dense spike 1 inch or more long, sulphur yellow, usually solitary, sometimes slightly branched at the base, fragrant.

A. Drummondii, fig. 26 (4), is certainly one of the best, the flowers being borne in axillary spikes, drooping gracefully. In a good specimen, which is as difficult to get as most of the kinds are to keep from growing too much, this is one of the most handsome of spring flowering greenhouse plants, the chief points to be guarded against in its culture being overpotting and over-watering. It is also rather subject to attacks by red spider, which can be subdued by judicious yet efficient syringings.

A. armata, fig. 26 (5).—This attains to a height of 6 to 10 feet or more, and forms a very handsome pyramid, its long annual growths gracefully arching being studded with solitary globular heads in March or April are very pleasing. If there is only room for one this may be given preference. By gentle forcing it may be had in flower from December.

A. diffusa has the flowers globular and usually twin, produced somewhat freely, the growths being diffusely procumbent. It attains to a height of about 3 feet.

A. oleaefolia elegans is very handsome, the heads of bloom disposed in racemes, the plants being of graceful habit, and the flowers are very bright. It is *A. lunata* of the botanists.

A. grandis is certainly but a variety of *A. pulchella*, but rather freer in growth, though both are free enough, soon forming specimens 10 to 12 feet high when the object is a pyramid, and the leading growths trained up. It flowers from February to May, the flowers being globular very freely produced.

A. longifolia magnifica is a fine erect growing kind, the leaves being linear lanceolate, the flowers borne profusely in loose spikes from the axils of the leaves, and during the early spring months. It attains to a height of a dozen or more feet, but can be kept to six by judicious pruning, which it seems to flower all the better off, at least the sprays are longer and the flowers finer.

The species named are all for the greenhouse. I have not grown any of the stove species. White scale is the great enemy of Acacias. I know of no better remedy than applying methylated spirits carefully to the stems and other parts affected with a small brush, and the cleansing influence of rain when placed outdoors is exerted most beneficially on the plants towards autumn. Indeed the plants usually come in in splendid flowering condition.—A. G. Y.

THE FRUIT ROOM.

AMONGST the various appendages to a garden an efficient fruit room is certainly not the least important, yet such a room we seldom see. Generally some back shed is fitted up with shelves in a very rough manner, and on these the winter Apples and Pears are laid, more or less thick as the crop may have been. In too many instances they are obliged to be laid too thick for their keeping well; as they are likely to be all wanted there is no alternative but to place them so if the space be too limited for their being kept more thinly. Although we all know that good-keeping fruit will remain sound a considerable time, even when subjected to this treatment, there is no doubt but it would keep much longer if allowed more room from the first, and those instances in which fruits have been kept for long periods will be found to be where plenty of space was accorded them. Some other conditions seem necessary for the well keeping of fruit, and it will be advisable to point out a few of these individually.

Whatever may be the reputation of a certain variety of fruit for keeping purposes, there is no question but its merits that way are influenced by the situation in which it is grown, as well as the period at which it is gathered, and the condition of the atmosphere at the time. By way of exemplifying these three conditions it will be as well to take a very common case to point them out, and though there may be some difference of opinion on the habits and qualification of the variety given as an example, there is certainly none that has a wider reputation; I therefore, by way of pointing out the conditions necessary to enable a fruit to keep as long a period as possible in a sound condition, will take the Ribston Pippin Apple as an example, not on account of its long-keeping capabilities—on the contrary, it is only an indifferent one in that respect; but by it we may learn the laws that govern other fruits as well. In very many districts the Ribston Pippin Apple has ceased to be cultivated as a profitable fruit; the trees thriving indifferently for a very few years, either die off or linger on a wretched existence, the dead branches almost equalling the live ones in number. Though there is generally a fair proportion of blossom each season, what fruit there is can seldom be classed higher than second, or perhaps third-rate. Now, these fruits have, in many of them, the germs of decay before they are gathered from the tree; black specks near the eye, or in some cases near the other end, turn into a mass of decay of a peculiarly bitter quality, differing widely from the ordinary "rot," by which most other fruits are carried off more quickly, but not less surely, than by this black bitter spot of the Ribston.

Whatever may be the different opinions regarding this, it seems pretty generally admitted that it is mostly due to the diseased condition of the tree on which it grows, or perhaps the worn-out constitution of the variety. Whether this be so or not (and there seems every reason to believe it is so), certain it is that a very large proportion of the Ribston Pippin Apples that are grown fall a victim to this black spot, which, by being of an intense bitter, disqualifies this Apple from mixing with others for making cider, which the decay in other fruits does not necessarily do, as they are not so bitter. Now, this bitter principle is doubtless imparted to the fruit by the decaying process it goes through differing from the same conditions by which other fruits become decayed and rotten; and whether the chemical change which takes place in the Ribston Pippin has its origin in the imperfect condition of the fruit at the time it is gathered, and the latent seeds of this disease be engendered then or afterwards, certain it is that a very great proportion of the fruit of this variety falls a victim to this disease. Though some situations favouring the better development of the fruit may render them less liable to it than in others, still it is reasonable to suppose that those places now in a great measure exempt will eventually become diseased like the rest, and the Ribston Pippin Apple will become a matter of history. The purpose is not now to prognosticate this, but to point out what conditions are necessary to preserve what healthy fruit there may be as long as it is possible to do so.

No one who has visited a fruit room in the warm days of September, when there was a quantity of fruit all ripening into that mellow condition which betokens perfection, but must have been struck by the odour which is emitted from them. This odour, it is needless to say, must be as hurtful to the well-keeping of fruits as anything can be—say, for instance, a quantity of Williams' Bon Chrétien Pear all ripening at once into the condition fit for table, and in a day or two all will be in a stage beyond this, and become a mass of juice which it is difficult to handle without bursting them. Now, I always look on a mass of this kind as the most dangerous to a fruit room, and as all early fruits ripen in warmer weather than other kinds do, they ought to be furnished with ventilation almost amounting to complete exposure, in order that the odour emitted by ripening fruit, which very quickly takes a decaying turn, may not contaminate the rest. Fruit at that time ought also to be kept thin. But to return to the Ribston Pippin. It often happens that these have to be gathered when the fruit room is more or less occupied by fruits in the condition spoken of; and if the weather be warm at the time, the fruit is impelled onward to a condition fit for table much earlier than they otherwise would be if kept cooler, and the character of the atmosphere they are in hastens on decay some time before ripeness or mellowness has done its part, hence fruits that ought to be in perfection in January are ready by the end of November—not Ribston Pippin Apples only, but all other kinds of fruits as well. This is one of the reasons why fruits in certain seasons keep longer and better than they do in others—the simple fact they are not ready to gather until cold weather insures their keeping, as more fruit generally perishes in November than in December and January, and no amount of mere cleanliness and care of removing diseased fruit can compensate for the crowded condition of the fruit room in the early autumn months, when the

weather at the same time is of a kind that favours "forcing," which it certainly does when it is warm at the periods spoken of. Now, as the Ribston Pippin cannot be preserved under circumstances as described, let us suppose an opposite case—a backward unkindly season, half-perfected fruits, presenting little but a thick tough skin, and a core quite as large as usual. Some of these fruits possibly might keep longer than was ever known before; as they contain so little saccharine matter there was scarcely anything within them to engender decay, hence a sort of withering or shrivelling-up instead of the usual spot and rot which consume the better class of fruits.

From the above it will be seen that warmth favours decay by forwarding the fruits and thereby hastening on the period of their existence; so in like manner cold encourages preservation by retarding the natural ripening of the fruit, and when it has approached that condition it tends to keep it from advancing further. But this unnatural state of things has its disadvantages. Fruits so treated are never good. Pears may be kept in an ice-house to a period much beyond that of their usual keeping time; but the flavour is gone. The same may be said of summer fruits, as Strawberries, Peaches, and the like, which have been so tried frequently. We may therefore learn from this that Nature cannot be so far outraged as is here shown with impunity. There exists a proper time for such fruits to be had in perfection, and to retard them much beyond it only produces an article much diminished in its most important qualities. From this we therefore learn that an ice-house is not a suitable place to preserve fruit intended for table, although it may become a very good medium to preserve some that it may be desirable to keep from motives of curiosity for as lengthened a period as possible. Some other conditions are also necessary to the well keeping of fruit, as will be shown.

Whenever a quantity of fruit is piled up in a heap it begins what in common language is called "to sweat." This sweating brings out an oily substance to the outside. Sweating will also occur without the fruit being so closely piled up as spoken of, but it is more slow; and if it be thinly on a shelf it is in its most legitimate way. This sweating coats the skin with a sort of varnish, which resists the action of the atmosphere, and certainly promotes the keeping qualities of the fruit. This varnish ought not to be removed by any means, handling being one of the certain ways to do so. Let the fruit, therefore, be placed at first singly on the shelves, and little else will be wanted but looking over them and picking out decayed ones; and the place being kept cool and ventilated there is a tolerable certainty of their keeping well, other things also being favourable.

As everyone is agreed that perfect cleanliness and sweetness are indispensable requisites in a fruit room the situation ought to be so chosen as to insure these as far as external circumstances will do so, but a full southern exposure is not good. The best fruit room I ever remember to have seen had broad shelves surrounding the building, and in the centre a tier of shelves with drawers in the bottom compartment, the whole affording ample space to get round, and the shelves not too crowded. I forget the means of ventilation, but believe it was ample. Some other useful fruit rooms that I have seen are lean-to against the north wall of a garden, the great defect in these being the want of ventilation which, in part at least, ought to be at top, and is rarely thought of in a lean-to shed. The sides being low, the exhalation from fruit cannot well be all carried off them; it is better, therefore, to leave an opening at top to allow it to escape, otherwise the fact of being behind a wall is an advantage rather than otherwise, and more so if it be isolated, and not form part of a series of buildings, as by that means end ventilation could be more easily accomplished. I have also seen a very useful fruit room half underground; but this is only advisable on a dry, gravelly, or sandy soil. I have also seen one under the shade of a tree, not in a dense wood (which is bad), and it answered very well. The main thing to stipulate for is plenty of space and ventilation, and to use the latter on all occasions except perhaps in damp warm weather, and the probability is that fruit will keep as long as it is required to do. A Kentish farmer stores his Apples away in the oast kiln, than which nothing can be more airy; and although the large quantity they often have compels them to lay them thicker than they otherwise would, they often contrive to keep Nonpareil and Golden Knob Apples in a good condition till March, and French Crabs still longer.—N.

THE PROTECTION OF ALPINE PLANTS.

THE Association for the Protection of Plants, founded in 1883 at Geneva, gives us in its bulletin interesting accounts on the necessity for their protection and the procedure to follow to gain this result.

It is requisite to form an efficacious protection, as the number of the Alpine species diminish in an alarming manner. Sometimes it is a question of species which, badly provided for the struggle, are but little

and slowly reproduced; sometimes and most frequently it is a question of species which man pursues in a disastrous manner. The culprits are chiefly botanists and plant sellers. Botanists who are acquainted with the rarity of certain plants do not hesitate to collect all the specimens they meet with in order to make exchanges with their confrères; the plant sellers who do the same to re-sell to the botanists and also to the public chiefly in the markets of Geneva, Lausanne, &c., to enable it to satisfy its tastes and cultivate Alpine plants in its gardens. This persisting demand has brought about a certain number of fatal results which it is good to signalise in passing. *Cyclamen hederifolium*, a plant which is never abundant, is also disappearing gradually from the Alpine Flora. Many native Orchids have become very rare or totally disappeared from the woods in which they abounded twenty years ago. *Tulipa sylvestris*, the Martagon Lily, *Erythronium Dens-canis*, are also disappearing. We no longer find *Anemone stellata*, *Lysimachia punctata*, *Euphorbia sagittalis*, or *Malaxis paludosa* in their former stations; of *Geranium lucidum*, formerly abundant in certain localities, there only remain six specimens; *Trapa natans* has during the last sixteen years totally disappeared from a pond in which it was growing. *Calla palustris* is cultivated by the peasants who know its station, and at Lofingue where there were many species of Orchids, a single man exterminated them all except three of a common kind; he sold them to amateurs for their gardens. *Daphne cneorum* and alpina have been destroyed in certain stations. Near the railway station of Aarbourg *Holosteum umbellatum* was established, the only example in Switzerland. A botanist exterminated it.

It may seem extraordinary that so many misdemeanors are to be ascribed to botanists, that is to say to those who should better understand the necessity not to destroy plants. The best and wisest amongst them are aware how dangerous are collectors, and many professors in large towns can tell the ravages made by twenty or forty pupils who throw themselves on the rare species indicated to them, and an hour later or the next day throw into a corner these "weeds," for which they care nothing, and which they gathered to be like others, and appear to take an interest in botany. On the other hand, the exchange societies do still more harm. These societies are formed between persons of distant localities, each undertaking to obtain for its colleagues the rare plants of its own locality; in this manner members can make very interesting herbaria, but it is to the great detriment of the rare local species, without science profiting much. They are chiefly amateurs and not savants who compose these exchange societies. M. H. Correvon, President of the Association for the Protection of Plants, saw a list of demands addressed to a member of one of these societies. Here, amongst other things are the demands.

Papaver alpinum (all that can be found); *Arabis arenosa*, *Iberis saxatilis* (idem); *Dianthus cæsius* (thirty large tufts); *Heracleum alpinum* (many, but only fine specimens); *Inula Vaillantii* (100 fine specimens); *Centranthus angustifolius* (a barrowful); *Hieracium lycopifolium* (cartload); *Pyrola minor* (as much as possible); *Myosotis versicolor* (100 specimens); *Scrophularia Hoppi* (barrowful); *Lysimachia thysiflora* (100 specimens); *Centunculus minimus* (a case full). Altogether they demanded more than 5000 specimens! And the species of which they required most were naturally the rarest. If we add to the depredations of the botanists the extension of culture, the clearing of forests, and the draining of marshes, it is not surprising that the unfortunate plants succumb with exceptional rapidity, especially when these combined efforts are increased by those of the sellers and their agents. One collector absolutely destroyed the station of the *Dracocephalum austriacum*. He took away all he could carry, and pulled up and destroyed the rest. This was done to increase the market value of his own specimens. These collectors are the worst enemies of plants. They arrive with an order for 10,000 specimens for example, and that chiefly for uncommon species. The peasant sends his children in search of them, and as they do not always know how to pluck up the plant properly, we have seen 400 or 500 stocks refused for 100 accepted by the collector. In 1884 one of these agents forwarded to America 4000 plants of *Edelweiss* taken in Engadine, and in England there are firms which require from 10,000 to 20,000 specimens of the same plant.

Cattle and sheep dogs destroy many species, or at least limit the propagation. They are cropped before arriving at florescence and fructification. In these conditions the number of specimens can only increase with extreme difficulty. Amongst the causes of the destruction of plants there are two of which it is not easy to appreciate the importance. The struggle for existence amongst plants—that is to say, the conditions that favour or restrict the multiplication or extension of the species; the variations in the world of insects.

The result of these multiplied causes of destruction is known; it is the extreme rarity of certain species and the complete disappearance of some others. It is good to signalise both, the first especially, and the "Association for the Protection of Plants" has published several works from the pen of Mr. H. Correvon amongst others indicating the species to protect. They are numerous. *Tulipa Billetiana*, very rare, known recently, and with a very circumscribed habit; *Tulipa Oculus Solis*, almost impossible to find; *Carex ustulata*, very scarce in Switzerland, where there are only three stations, each comprising 100 plants at most; *Iris virescens*, very rare; the Snowdrop (*Leucojum vernum*), *Hottonia palustris*, *Utricularias*, *Alisma ranunculoides*, *Anagallis tenella*, of which only one station is known in Switzerland; *Trientalis europæa*, formerly abundant, is now only found in three stations. I cannot mention all. The Association, which naturally occupies itself chiefly with the Swiss flora, is gradually making a catalogue of

the rare and notably diminishing species in order to draw the attention of all benevolent "preservers" to them who try to aid the Society by their endeavours. It is quite time, for without assiduous attention many species will disappear as many of their fellows have done in historical times, and in the majority of cases since a very recent date. *Butomus umbellatus*, which was still at Yverdon at the beginning of the century; the *Calla*; the *Zannichellia tenuis*, which is probably a local form of the *Z. dentata*, and is no longer to be found; *Lysimachia punctata*; and many others it would be easy to mention. One must act under pain of seeing certain plants entirely disappear, like that unfortunate *Psadia rotundifolia* of St. Helena, which witness of the captivity of Napoleon I. remains as the unique specimen in the world of its species, and its seeds will not grow!

Act, one may say; but how? The Association for the Protection of Plants shows us a way, and a good way. It works in two ways. In the first place it has formed in the environs of Geneva a botanical garden for the exclusive culture of alpine plants, and which sells these plants to botanists and amateurs, hoping thus to deter them from pillaging mountains and valleys. This garden has proved a success, collectors apply there and are sure to find what they want at a cheap rate. The plants have nearly all been raised from seed. The Association sells seeds and plants, paying special attention to the culture of high mountain flora of the Alps, also of the Himalaya and Andes. It may seem strange that plants from great heights are successfully cultivated in the plains, yet, nevertheless, such is the case. Generally the sowing is performed in autumn before the cold, and on this point the Association gives all the necessary instructions to those who buy seed and wish to make experiments in acclimatisation or extension in gardens or on mountains. To those who doubt the possibility of acclimatising alpine plants in the plain, I shall simply answer by mentioning the example of that horticulturist of Berne, who grew 30,000 plants of *Edelweiss* from seeds; the same *Edelweiss* which in Switzerland is only found at the level of the continual snow, is still prosperous at Geneva; still more, it lives and flourishes at Paris and in the environs. In truth, it displays an astonishing toughness.

An objection at once presents itself to the mind of the naturalist. Admitting that one can really cultivate the Alpine species in the plain at a very different altitude, in a medium totally varying from the point of view of temperature, aëration, light, perhaps the chemical constitution of the soil, &c., it is certain the plants will vary but little; but slight differences will occur, owing to the change of medium which stimulates the natural variability of the plant, and the species perhaps will change in character from certain points of view.

Such being the case, and as it is most probable, the naturalist will be overjoyed. In these conditions the Alpine garden of Geneva will render great services to science, and the botanist, curious to study the modifications imposed upon the species by the change of medium, will find in this garden a real laboratory. It is not, at least, I hope, exclusively commercial, and those who direct it will doubtlessly understand the interest of the studies they can favour without injuring in any way their trade. But then one will object, If the acclimatised plants vary however little, it will not be the original species that are preserved, and the object of the Association is only half gained. The objection is well founded, but the Association seems to have anticipated it, and the second of the methods employed for the protection of the Alpine Flora springs from a knowledge of the necessity of maintaining and protecting the species *in situ*, in their normal or actual habitat. This is attained by the creation of botanical gardens in the mountains themselves. In these gardens are to be grouped the rare species of the heights, and they will be in normal conditions from the point of view of medium, and certain species which do not reach floescence in the plain will here receive special culture. These gardens supply the seed employed in the gardens of Geneva.

One of these gardens—the *Linnæa*—was inaugurated last year in Valais, at Bourg-Saint-Pierre, on the route of St. Bernard; others are to follow. It seems to us that there might easily be found in different parts of the Swiss mountains pieces of ground often unfit for agricultural purposes where certain species might be introduced and preserved. There ought to be communes, or even private individuals, who would allow acclimatisation experiments of this kind to be made in their property, and the Association could deal with them as the "Jardin d'Acclimatisation" of Paris with regard to those to whom it confides cattle. However, it may be by the creation of the garden of Geneva the Association certainly diverts from the mountains many botanists, amateurs, and sellers, and assures the preservation of rare species, and in the Alpine Gardens it completes its work by preserving plants *in situ*. It is of importance that this last protection should be multiplied as much as possible.

To the two preceding means others may be added. It is good for the authorities to decree interdictions and penalties, as they have already done in Switzerland in France. It is good particularly to make the majority understand the scientific, and often practical utility, of the protection of plants. Besides, a marked tendency is manifested in this direction. In England, France, and different countries many persons begin to comprehend and consider the question, as we can judge by the notes published in the *Bulletin de l'Association pour la Protection des Plantes*.

We can only applaud this movement, in which the Association has certainly a large share, but we particularly insist upon the scientific interest it presents. By preventing the disappearance of vegetable species, and assuring their protection and survival, and by furnishing at

the same time the naturalist with means of studying curious and important facts, botanists and their friends do what zoologists regret not having done, when there was still time for many animal species. So many species disappeared, so many documents lost, leaves torn in the book of nature, and we cannot decipher this last with such ease as to be able to permit ourselves the whim of skipping a page here or there and risk omitting an important passage.

The protection of plants is a work of public utility, because it is a work of scientific utility, and this is why we have spoken on the question.—HENRI DE VARIGNY.—(*Revue Scientifique*.)



THE CRYSTAL PALACE ROSE SHOW.

"WANTED, a single official at London Bridge Station, who can tell, even before the Crystal Palace train starts, from which platform it will go." This was the despairing cry of two East Anglian rosarians on the cold wet morning of July 5th, and it was cried in vain. We missed the train, and had to kick our heels for an hour, which was sadly wanted, for one of us was showing in large classes. It was cold indeed—how cold I did not realise till I found myself seated at the base of a statue of Flora (who was doubtless much astonished at my occupation), trying with breath and budding knife to open a bloom of *Annie Wood*! Those who are acquainted with that faithless Rose will understand that any assistance required by it in opening after a long summer night's journey is a wonderful sign of the coolness of the morning, as described by "J. H. P." The general character and quality of the Roses shown in the largest classes would probably be considered as hardly up to the average, the best growers having not yet got to their strongest H.P.'s, and the first flush of southern Teas being either over or spoilt by rain.

There was a close contest in the nurserymen's class for the champion trophy. And here, with the sanction of "D., Deal," I should like to offer a remark or two on the judging of seventy-twos in general and for the trophy in particular. Those who have never officiated in a class of these dimensions, and who may wonder at the time expended on it, must remember that a seventy-two is probably nearly 4 yards long, and that five seventy-twos in a row are approaching 20 yards long; that the first general survey to see which, if any, of the stands require pointing, must by no means be hurried (for first impressions go a long way), and should, I think, be independent, *i.e.*, performed separately by each of the Judges; and that if, for instance, in a row of five stands, Nos. 1, 3, and 5 are pretty close together in merit and require pointing, a very considerable amount not only of time and labour, but also of patience, attention, and clearness of head are necessary. It should also not be forgotten that it is a responsible business; that it is a serious matter to our good friends the nurserymen; that a large amount of care, labour, and cost have been expended; that it must be done within a certain time, not only because of the incoming of the public, but also because the blooms may change in an hour or less; that, therefore, no pains should be spared in coming to as just a decision as possible, and yet that it must be done quickly.

The rules for judging issued by the N.R.S. teach us that in pointing a certain bloom should be chosen as the standard of three points. This is, I think, most important; I hope it is never omitted; I cannot see how any accurate pointing can be done without it; and I think the bloom should be carefully chosen—not just the first fair one that comes. We must remember that this is the standard. Every Rose in at least two seventy-twos (equal 144), or perhaps three (equal 216) must be judged by this as the type or example of three points. It must be remembered, too, that if any seventy-two has a tail it is a gradual one; not only because in setting up a man naturally puts his best Roses in first and his weakest when he is finishing, but also because he will do it designedly, if he has any weakness, since the smaller blooms gradually shading off will suffer less by contrast. Can anyone keep this standard accurately in his head through a gradually deteriorating scale of 144 blooms without frequently referring to it? My suggestion, therefore, is that in a matter of closeness and importance the standard Rose should be carried by one of the Judges, and compared directly there is a doubt as to the number of points any Rose is worth—a bother, no doubt; but let us be as sure as possible in our decisions.

Again, has anyone after handing in his judging card in class 1 with a light heart to the Secretary, remembered with a perfectly clear conscience that he and his partners (see Rules 4 and 6) are solely responsible on the question of duplicates in that class? Are they often, or ever, sure that not only the same Rose but also the same name has not appeared more than once in the same stand? It is too much to expect of them in the time, in my opinion. The seeing that the same name is not repeated in any one stand is purely clerk's work, which anyone might do; but even then the Judges ought to see how every Rose, even the best known ones, are named; and I therefore suggest that, if possible, other persons should be appointed to look for duplicates, at least of names, in the big classes.

In the competition for the amateurs' trophy the contest was not quite

so close. Mr. Lindsell has fulfilled our anticipations of last year, and received our hearty congratulations on attaining the premier position in the first year that he has tried for it. But "J. H. P.," though beaten, was not disgraced; it was plain, to those who knew his resources, that his Roses were not out, and later (how much later I do not know—he was still winning in open classes on August 2nd and 5th, and may be showing in good form still for all I know) his blooms were grand indeed, and though, weak or strong, he never shrinks from the highest classes, there were few even among nurserymen who could beat him. It is no detracting from Mr. Lindsell's fine performance of winning the metropolitan trophy to say that "J. H. P." at his best has this season, as in several others, been invincible as an amateur; it is a matter of congratulation and comfortable remembrance with some of us, if at any time we have lighted on him when he was weak or weary, and snatched a momentary triumph.

The suggestion thrown out by him in last week's Journal that the metropolitan challenge trophy should be competed for on the same lines as the northern one is worthy of consideration, and is manifestly disadvantageous, as it would be (at least I should think so) to his own disadvantage; but at present I am hardly inclined to agree with it, though fully understanding that there is much to be said in its favour. Mr. Burnside has made a very distinct advance in his Tea Roses this season, and has put a larger distance between himself and his rivals; his Teas have always been well shown, and they have now become also really fine blooms in themselves.

I quite agree with "J. H. P." that class 17 for those amateurs who have never won a prize at a N.R.S. exhibition is a good test of the health of the Society, by registering the number of working recruits that are being gained. I matriculated there about ten years ago, and I think I could name my six Roses now. I had second prize with a pretty box, whose arrangement cost me much care, but I thought then, and think still, though with less severity, that I ought to have been first.

The most interesting classes for me are those for new Roses, but I think it is open to question whether something ought not to be altered in the class for six new Roses, amateurs. With rare exceptions, of late years, only two exhibitors show in it, and often only one of them. Of these "J. H. P.'s" Roses are good, and the other gentleman's (I am not afraid of offending him) are bad; visitors can see specimens of the new sorts in greater variety in the corresponding nurserymen's class, but there also there is not much competition.

In the gold medal class, so very interesting as one wonders over the future reputations of the new-born claimants, it was delightful at last to find a real competition, and I concur with "J. H. P." that this is a most important piece of judging, and one on which no time and care should be grudged. I will wait to see his notes on new Roses before offering my own ideas, but I may here say that I hope the Judges in awarding two gold medals remembered that Salamander was shown on an exceptional morning when Thomas Mill, Annie Wood, and other frail beauties were unimpaired, and when the trustworthiness of the exposed centre of Mr. G. Paul's fine Bourbon could not be strongly tested. To the outward seeming Margaret Dickson, the gold medal winner at Birmingham, was far the best of the three.

I should like, in this connection, to record my conviction that in the death of Mr. H. Bennett of Shepperton the rosarian world has sustained a severe loss. Not to mention his former triumphs, I opine that in a year or two few Tea Rose stands will be able to spare Cleopatra; and, whatever strides the art of scientific Rose raising may make in future years, I think he will not be forgotten as one of its best and earliest pioneers.—W. R. RAILLEM.

I HAVE read Mr. Pemberton's notes on the last N.R.S. Crystal Palace Show with some interest, and although I agree with some of his views, I do not quite follow him in others, nor do I quite see what he wishes to have in competition for the amateurs' trophy. He says that the competition should be open to twenty-four and thirty-six. Does he mean that the trophy class should be of a size (such as twenty-four) as would bring in more competition? If so I quite agree with him, as forty-eight is a prohibitive number to all except growers of 2000 to 5000 Rose trees. Most growers with any pretension to showing could show in good form twenty-four varieties, and if the N.R.S. Committee altered the trophy class to that number it would admit of a very large number competing and make the entry very large.

Mr. Pemberton seems to think seven a large number of exhibits for class 17 (those who have never won a prize), but last year there were seventeen competitors in that class. He also refers to the winners in that class as likely hereafter to come to the front, but surely he knows Mr. Shoemith (who is Mr. Hodgson's gardener) is a veteran at showing Roses and Chrysanthemums, and is a well-known prize winner, and can thereafter hardly be called a new man—although possibly he has never showed at the National, as his present master was not a member till this year.

I hope Mr. Pemberton will ventilate the trophy question at the N.R.S. Committee meeting.—CHARLES J. GRAHAME.

CAMPBELL'S FUMIGATING INSECTICIDE.

HAVING given this invention a fair trial I have no hesitation in saying that I consider it the most effective and easily applied destroyer of insects without the slightest injury to the most tender plant that has

come under my notice. I have applied it strictly according to directions, and have found it everything the vendors claim for it. A house of show Pelargoniums was first treated, and by way of testing it several tender plants usually most susceptible of injury from fumigations of tobacco paper were put in the house. Among these plants was an *Adiantum euneatum* with tender, half-expanded fronds; also some shoots of Gros Colman Vines with young fresh leaves, than which I know of nothing more susceptible of injury from tobacco paper smoke. The result of one evening's fumigation was the most thorough destruction of green fly and thrips without the slightest injury to any of the plants named. The old blooms of the Pelargoniums that were naturally ready to fall to pieces dropped off, but not younger trusses. A house of Tuberous Begonias—very sensitive to ordinary fumigations—and a cool Orchid house have been fumigated with Campbell's rolls, and the effect was perfect in every way. At my recommendation Messrs. Thomson of Clovenfords have fumigated three of their largest vineries with it in which red spider was very troublesome, the result being death to the spider and no injury to the Vines. I consider this last fact of very great importance to all Grape growers, for to keep spider in check, to say nothing of killing it outright without injury to the bloom of Grapes and the foliage, has long been an unsolved problem. I had no occasion to apply the rolls to spider, as I had previously completely routed it without fumigating or any injurious application, though it was a tedious process compared to one night's fumigation. An



FIG. 27.—CAMPBELL'S FUMIGATING INSECTICIDE.

immense recommendation for this invention is its simplicity of application. The rolls are hung up like a lantern, and set fire to and left. In no instance have I found more attention needed.—D. THOMSON, *Drumlanrig*.

[We have received some of the rolls referred to from Messrs. W. Clibran & Sons, Altrincham, the agents for their distribution, and who also supply us with the accompanying illustration.]

HORTICULTURAL SHOWS.

BASINGSTOKE.

By the kind permission of C. Hoare, Esq. (the present tenant) this Society was enabled to hold its fourteenth annual Show of plants, fruits, &c., in the beautiful, extensive and well cared for grounds in close proximity to the mansion in Hackwood Park. We may say in passing that the keep of the grounds and gardens reflect great credit upon Mr. Bowerman, the head gardener at Hackwood, and whose name will figure frequently in the prize list. The Show was considered the best the Society has ever had. The weather, which was bright with a refreshing breeze up to three o'clock in the afternoon, then changed, and rain fell at intervals during the afternoon, making the grass very damp and uncomfortable for the thousands of people who put in an appearance, not only to see the exhibits which filled the large marquees, but also to witness the military tournament and various other attractions provided for their entertainment. Mr. Bowerman, gardener to C. Hoare, Esq., Hackwood Park; Mr. T. Russell, gardener to W. Bradshaw, Esq., Audleys Wood; Mr. Weaver, gardener to W. Cooper, Esq., Oakley Park, Oakley; Mr. Wills, gardener to Mrs. Pearce, Bassett, Southampton; and Mr. Curry, gardener to Colonel Pepper, Milford Hill, Salisbury, were the principal exhibitors in the plant classes.

PLANTS.

For six stove and greenhouse plants in flower.—First, Mr. Russell, showing, among others, a large and grandly flowered plant of *Eucharis amazonica*, in fine condition. Mr. Curry was a good second, and Mr. Wills a good third, both showing fresh well flowered plants. For a like

number of stove and greenhouse foliage plants Mr. Curry was first with very good plants, his Crotons being bright, and his Palms green and fresh; Mr. Wills and Mr. Russell taking second and third positions in that order with good all-round stuff. For a specimen stove or greenhouse plant in flower Mr. Russell was a good first, showing another magnificent and profusely flowered plant of *Eucharis amazonica*, Mr. Bowerman being a close second. With a specimen foliage plant Mr. Bowerman and Mr. Curry were first and second, both showing fairly good and well coloured plants of *Croton*. Mr. J. Holdaway, gardener to Colonel May, Hawkfield, was the only exhibitor of six *Achimenes*, and he received a first prize for fine plants. Mr. Weaver had the best half-dozen exotic Ferns, distinct varieties, showing good plants of *Adiantum cardiochleana*, *Davallia Mooreana*, &c., Mr. Curry being second, and Mr. G. Southcote, gardener to Captain Oldfield, South Warnborough, was third. With a like number of British Ferns Mr. Tripp, gardener to Mrs. Field, Goldings, was first. Mr. Russell was first for four *Fuchsias*, distinct, with good plants. Mr. Weaver was first for Zonal and double *Pelargoniums* with neatly trained, well flowered plants. Mr. G. Best, gardener to C. W. Chute, Esq., The Vyne, was first for four plants of tuberous-rooted *Begonias*, staging small, fresh, well flowered plants; Mr. Russell being second with larger, but sparsely flowered plants. Mr. Best had the best six plants suitable for table decoration, Mr. Bowerman the second best, and Mr. G. Southcote the third best; all showing small, even, fresh plants of Palms, Crotons, *Pandanus Veitchii*, &c., in good condition.

SPECIAL PRIZES.—Groups.—Five good groups were arranged in a half-circle of 16 feet the longest way. It took the Judges some time to decide the relative positions of these, the plants employed being of a very choice and suitable character and arranged with excellent taste. First, Mr. Gibson, gardener to H. Harris, Esq., Steventon Manor; second, Mr. Bowerman. This group contained a choice assortment of plants—*Eucharis grandiflora* being freely employed—and presented a very imposing appearance; and had there been fewer Palms in the background it would have been placed first instead of second—a position accorded to it by the calling in of a third Judge. Mr. Weaver was an excellent third. Mr. Wills and Mr. Curry also showed well in this class. Mr. Wills had the best twelve plants in or out of bloom, Mr. Curry being second, and Mr. Bowerman third, all showing well. Mr. Southcote had the best four plants of pyramidally trained *Coleus*.

CUT FLOWERS.

Mr. Neville, gardener to Mr. Flight, Twyford, Winchester, had the best stand of twenty-four *Roses*, his bloom of Mrs. John Laing winning the prize for the best bloom in the Show. Mr. Neville was also first with a good stand of twelve *Roses*, and Mr. Russell was first for stand of twelve *Dahlias*, Mr. Neville being second. *Asters*, &c., were also shown extensively and well.

The ladies' classes were well filled, the prizetakers being Miss Wadmore, Miss Flight, Miss N. Owen, Miss Loe, and Miss Ladsham of Shirley, all for excellent arrangements, foliage and berries being very effectively intermixed with the flowers, Grasses, and Fern in the stands arranged for decoration of dinner table.

FRUIT.

This made a very fine display. The grand examples of Black *Hamburgh Grapes* staged by Mr. T. Osman, gardener to L. J. Baker, Esq., Ottershaw Park, Chertsey, would be hard to beat at any Show. The bunches were "single," of good size and shape, the berries large and beautifully coloured. With a collection of six kinds Mr. West was first, staging a good all-round lot, his *Peaches* and other fruit dishes being very good. Mr. Osman, who was second, had grand Black *Hamburgh Grapes*, but his other dishes were a long way behind those in the first prize collection. Mr. Osman was well first with grand bunches of Black *Hamburgh*; Mr. Holloway, gardener to F. Read, Esq., Down Grange, being a good second with two bunches of black *Grapes*, not *Hamburghs*. Mr. Osman was first with fine, well-coloured bunches of Black *Alicante*. Mr. Bowerman was a good second with bunches of *Gros Maroc*. With two bunches of white *Grapes*, any variety, Mr. Osman was first for *Buckland Sweetwater*, large and handsome, and having large and fairly well-coloured berries, just beginning to damp in the centre of the bunch. Mr. Holloway was second for good pieces of *Foster's Seedling*, and Mr. Neville third for large bunches of the same variety, only requiring a couple of more weeks to ripen properly. Mr. Osman was first for two bunches of *Muscat Grapes* and Mr. Bowerman second, both staging good bunches. Mr. Bowerman was first for a green-flesh *Melon* with *Hero of Lockinge*, Mr. Weaver being second. The last-named exhibitor had the best flavoured scarlet flesh in a fine fruit of *Blenheim Orange*, Mr. Bowerman being second. Mr. Bowerman staged the best dish of *Peaches*, also the best three dishes of culinary *Apples* and the best three dishes of *Plums*; Mr. Osman and Mr. Bowerman being first and second in that order for six *Apricots*, showing clear, bright, even fruits of *Moor Park*. Special prize for eight kinds of Fruit.—Mr. Bowerman was first, showing *Peaches*, *Apricots*, *Nectarines*, *Figs*, and *Grapes*. Mr. Osman's *Grapes* were a strong feature in his second prize collection, which also contained a medium-sized *Queen Pine*.

VEGETABLES.

These were shown very extensively and in fine condition, the collections staged in competition for Messrs. Sutton & Sons' prizes and Messrs. Webb & Sons' prizes were set up with great taste, and were very close to each other in point of merit, only one or two points being between the first and second collections in two instances. Mr. Lye, gardener to W. H. Kingsmill, Esq., Sydmonton Court, Newbury, secured first

position in the open class for nine kinds, and he also won first in Messrs. Sutton's, and first in Messrs. Webb's special classes for six kinds, staging, as already stated, grand produce in all his collections. Mr. Kneller of Malshanger House, and Mr. Bowerman also showed well in these classes, being a close second respectively. Mr. Bowerman had the best brace of *Cucumbers*. Mr. Kneller was first for twelve *Onions*, staging *Ailsa Craig* of immense size, even, and firm; weighing in the aggregate 34 lbs.

Miscellaneous Exhibits.—Messrs. Sutton & Sons sent a grand and varied collection of plants and spikes of herbaceous plants from their nurseries at Reading, which were greatly admired. Mr. Ladsham also contributed cut hardy flowers, which served to illustrate their great usefulness and adaptability for floral decoration.

CALNE.

THIS long established and popular Wiltshire Society always holds its annual Exhibition at Bowood, the beautiful seat of the Marquis of Landsdowne, than which no more beautiful site could be found. The whole of the grounds, park, and drive are thrown open to all visitors, and nothing but fine weather is wanted to make the Show a great success. Unfortunately the best portion of the day was extremely wet, and a serious pecuniary loss must have resulted. Mr. F. Henly is the Honorary Secretary, and, aided by an efficient Committee, everything was well done.

PLANTS.

On this occasion the prizes for specimen plants were smaller than usual, and as a consequence some of the best known exhibitors were not represented. Their plants were certainly missed, but local growers made a very creditable display. The best nine stove or greenhouse plants, flowering or otherwise, were staged by Mr. J. F. Mould, Pewsey, who had several good *Ericas* and *Lapageria alba*, with a few other well flowered specimens, fairly fresh. In the second prize collection, shown by Mr. J. Brice, gardener to Herbert Harris, Esq., Calne, were very well grown specimens of *Crotons Victoria* and *mutabilis*, and a fine *Latania borbonica*. The third prize was awarded to Mr. Curry, gardener to Colonel Pepper, Salisbury, who had several faded flowering plants. For six fine-foliaged plants Mr. G. Smart, gardener to Mrs. C. Harris, Calne, was placed first, he having a grand plant of *Davallia Mooreana* fully 9 feet across, a good specimen of *Gleichenia rupestris*, a neat *Cycas revoluta*, two Palms, and a *Croton*. Mr. Curry was a close second, his best being *Kentias Belmoreana* and *Fosteriana*. Mr. G. Smart was easily first for eight exotic Ferns, having large healthy specimens of *Gymnogramma chrysophylla*, *Gymnogramma calomelanos*, *Davallia fijiensis*, *Nephrolepis davallioides fureans*, *Adiantum Williamsi*, *A. cuneatum*, and *A. peruvianum*. Mr. T. Price was first for Tuberous *Begonias*, and H. C. Henly, Esq., Calne, second, the last-named also gaining the special prize offered by Messrs. J. Laing & Sons for the same class of plants. Mr. J. Lye, gardener to the Hon. Mrs. Hay, Market Lavington, was easily first for six well grown and freely flowered *Fuchsias*, the varieties being *Abundance*, *Lye's Rival*, *Mrs. Bright*, *Elegance*, *Constancy*, and *Charming*. Mr. T. Price was second.

In the amateurs' classes for plants, or those not open to all comers, the competition was not very keen. The best six exotic Ferns were shown by Mr. G. Smart, who had very well grown plants of *Gleichenia Speluncæ*, *Adiantum graillimum*, *Gymnogramma Laucheana*, *Adiantum grandiceps*, *Lomaria gibba*, and *Adiantum cuneatum*. The same exhibitor was also well first for six fine-foliaged plants, among these being good specimens of *Kentias australis* and *Belmoreana*. Mr. Herbert Harris was the only exhibitor of *Orchids*, and staged well-flowered plants of *Epidendrum vitellinum majus*, *Cypripedium Dayanum*, *Odontoglossum hastilabium*, *Oncidium Harryanum*, *Cattleya Gaskelliana*, and *Odontoglossum Alexandrae*. Mr. Henley was first for *Coleus*, and Mr. W. A. Cook, gardener to Major Heneage, V.C., Compton Bassett, second. The last-named had fine *Cockscombs*, and was first, being also successful in several other classes for pot plants.

CUT FLOWERS

Formed quite an attractive display, the competition being good throughout. A first prize of £5 was offered for thirty-six varieties of *Roses*, single trusses, and this attracted several noted growers. Messrs. J. Jefferies & Son, Cirencester, were well first, their stands including very fine fresh blooms of Captain Christy, Marie Baumaun, John Laing, Mdle. Susanne Radocanachi, Star of Waltham, Madame Eugénie Verdier, Charles Lamb, A. Colomb, Comte Raimbaud, Marie Rady, Madame Lambard, Magna Charta, Innocente Pirola, A. K. Williams, and La France. Dr. Budd, Bath, was a good second, and Messrs. Perkins & Sons, Coventry, third. The best twelve *Roses* were shown by Mr. G. Humphries, Chippenham, H. Ash, Bath, being second. Mr. Humphries was easily first for show *Dahlias*, having Mrs. Gladstone, H. Walton, Vice-President, W. Rawlings, Harry Keith, Agnes, Nellie Cramond, Goldfinder, General Gordon, Maud Fellowes, Crimson King, and J. T. West, Cara, Rosetta, and T. Hobbs, all in first-class condition. Mr. S. Cooper was second. Messrs. Walters of Hilpert, S. Cooper, and J. Perkins, Chippenham, were the principal prize-winners in the classes for *Asters*, and *Gladioli* were well shown by Messrs. J. Jefferies & Sons. The twelve best bunches of choice cut flowers were shown by Mr. G. Smart, and Mr. W. A. Cook was a good second. These two exhibitors were also the most successful in other local classes for hardy and other cut flowers.

FRUIT.

Fruit was fairly well shown, but there is good room for improvement in this department. The best collection was staged by Mr. Smart, this

including the usual assortment of Grapes, Melons, Peaches, Nectarines, and Apricots. Mr. Cook was second. The first prize Black Hamburg Grapes, shown by Mrs. Spicer, were very well coloured; and in this class Mr. H. J. Harris was second. With white Grapes Mr. Smart led with Buckland Sweetwater; Mr. H. J. Harris being second with Foster's Seedling. Messrs. Henly, Cook, and Smart and Mrs. Spicer were the principal prizewinners in the various other fruit classes. Mr. Cook was well first for a collection of vegetables, these comprising good dishes of Autumn Giant Cauliflower, Pragnell's Exhibition Beet, Moore's Cream Vegetable Marrow, Duke of Albany Pea, Lady Truscott Potato, Perfection Tomatoes, Lyon Leeks, and Runner Beans. Mr. J. W. Akerman was second, and Mr. H. J. Harris third. The first prize for a collection of Potatoes was awarded to Mr. J. Akerman.

The most prominent non-competitive exhibit was from by Mr. B. S. Williams, Holloway Nurseries, who sent a capital group of plants, which occupied one end of a tent. Included were all well flowered plants of *Cattleya gigas*, *C. Bowringianum*, *C. Dowianum*, *Oncidium incurvum*, *Odontoglossum vexillarium*, *Cypripediums* in variety, and other Orchids; *Nerine Fothergilli*, Pitcher Plants, Crotons, Palms, and other serviceable decorative plants.

Messrs. G. Cooling & Son contributed a capital collection of Apples, included among these being Beauty of Bath, The Queen, Cox's Pomona, Duchess of Oldenburg, Stirling Castle, Grenadier, Peasgood's Nonesuch, Pott's Seedling, Ecklinville Seedling, Worcester Pearmain, Lord Derby, Lord Suffield, Reinette de Canada, and Cellini. These were all gathered from small trees on dwarfing stocks, and which are bearing remarkably well this season.

SHERBORNE.

It is to be feared the death blow has been given to this old established and popular Society, a heavy downfall of rain during a greater part of the afternoon of the Show day effectually checking the attendance of visitors; this, following upon other bad years, must leave the Committee in a very unenviable position. The Show, as usual, was held on the site of old Sherborne Castle, the tents being actually interspersed among the ruins. Mr. Digby, in accordance with the custom of his predecessors, kindly threw open the whole of his beautiful and well-kept grounds, and more delightful fine-weather promenades could not well be found, among other attractions being the favourite seat of Sir Walter Raleigh, who for many years was associated with Sherborne Castle. As far as the exhibits and competition generally was concerned the Show was a great success, the arrangements and courtesy of Mr. Stokes, the Honorary Secretary, and a good working Committee leaving nothing to be desired.

PLANTS.

Mr. T. Wilkins, gardener to T. M. Guest, Esq., Inwood, was by far the most successful exhibitor in the plant classes, though in several instances the competition was very keen. For twelve specimen fine-foliaged plants Mr. Wilkins was well first, the second prize going to Mr. T. Kidley, gardener to A. Helyar, Esq., Coker Court, Yeovil. Mr. Wilkins was also first for a miscellaneous collection of plants in or out of flower; and Mr. G. Runnacles, gardener to C. Thurburn, Esq., Leweston, second, both having very meritorious collections. Another class was provided for a group of miscellaneous plants arranged for effect in a half circle, and this was the making of the Show, there being five competitors, and all made good displays. Here again Mr. Wilkins was first, his group being composed of choice materials, including Orchids, elegant Palms and Crotons, Ferns, Grasses, and such like. Mr. W. G. Pragnell, gardener to J. K. D. Wingfield-Digby, Esq., Sherborne Castle, was a very close second, only wanting a few Orchids to give him first place. The third prize was awarded to Mr. Runnacles, and an extra prize was given to Mr. J. Lloyd, gardener to V. Stuckey, Esq., Hill House, Langport. The last named was placed first for twelve Ferns and Mosses, Mr. Wilkins being second. Both had a well-grown lot of plants. Tuberous Begonias were remarkably good. With these Mr. G. H. Copp, gardener to W. E. S. Drax, Esq., was well first, the second prize going to Mr. J. Andrews, gardener to General Place, Thornford.

CUT FLOWERS.

These are always a feature at the Sherborne Shows, but we have seen a much better lot of Roses staged there. Dr. Budd, Bath, was the only exhibitor of twenty-four triplets, and was rightly awarded the first prize. Dahlias, on the other hand, were remarkably well shown, Messrs. Keynes, Williams & Co. competing in their usual first-class style. This firm was easily first for twenty-four varieties, second honours going to Mr. J. Nation, Staplegrave. Mr. R. H. Poynter, Taunton, was first for Gladioli, and Mr. Tottle, Taunton, second. The best twelve bunches of choice flowers were staged by Mr. Williams, Mr. Poynter being second.

The foregoing were all open classes, and in addition there were a considerable number confined to amateurs and their gardeners. The best Fuchsias were shown by Mr. G. Gillingham, gardener to R. Phelps, Esq., Yeovil, Mr. T. Anthony being second. Very rarely are Coleuses so well shown, the first prize group of eight plants grown by Mr. W. G. Pragnell being exceptionally good. Mr. Runnacles was second. Mr. Copp was very successful in various plant classes, as also was Mr. Andrews and Mr. Williams. The most tastefully arranged basket of cut flowers was shown by Miss Lyne, Wimbledon, Mr. E. C. Trevelyan being second, and Miss Percival, Wimbledon, third.

FRUIT.

Classes for fruit were very numerous, professional gardeners and amateurs not employing a regular gardener, all having classes open to them only. There were five competitors for the five-guinea cup and

other prizes offered for a collection of eight dishes of fruit, Mr. J. Lloyd however being well first; the second prize going to Mr. T. Wilkins, and the third to Mr. H. W. Ward, gardener to the Earl of Radnor, Longford Castle, Salisbury. The premier collection consisted of Madresfield Court and Muscat of Alexandria Grapes, very well finished in each case. Hero of Lockinge Melon, Bellegarde Peach, Pineapple Nectarines, Brown Turkey Figs, Jargonelle Pears, Morello Cherries, and Goliath Plums, all in good condition. There was good competition in the class for Black Hamburg Grapes, Mr. W. G. Pragnell being first with well finished bunches; and Mr. J. Lloyd second. In the any other black class Mr. Goodall, gardener to A. Morrison, Esq., Fonthill, was placed first for very fine examples of Gros Maroc; the second prize going to Mr. W. Conolly, gardener to F. R. C. Talbot, Esq., Lyme Regis, who had the same variety in fairly good condition. Mr. Lloyd was first in the Muscat of Alexandria class with small, well finished bunches; the second prize going to Mr. Conolly for immense clusters not sufficiently ripened. Much the same thing happened in the class for any other white variety, Mr. Lloyd being first for Foster's Seedling; and Mr. Conolly second with the same variety, perfect in all but colour. The best Melon was staged by Mr. H. W. Ward, who had a selection from Hero of Lockinge in very good condition. Mr. A. Crossman, gardener to J. Brutton, Esq., Yeovil, was second with the true Hero of Lockinge. Peaches and Nectarines were extensively shown. With the former Mr. Ward led with Sea Eagle, good in every way. Mr. Pragnell following with fine fruit of Dymond. Mr. Ward was also first for Peaches grown in the open air; and Mr. Harris second. Mr. W. G. Pragnell had a good dish of Pit-maston Orange Nectarine, and was first; the second prize going to Mr. A. Crossman. The principal prizewinners in the other classes were Messrs. Lloyd, Kidley, T. Moore, Copp, Pragnell, Runnacles, Trevelyan, Peters, and Williams.

VEGETABLES

Are always good at these shows, professional gardeners, amateurs, and cottagers all exhibiting in first-class style. The best collection of twelve dishes was staged by Mr. G. H. Copp, who had very fine Autumn Giant Cauliflowers, Ellacomb's Parsnip, Pragnell's Exhibition Beet, Sutton's Seedling Potato, New Intermediate Carrot, Wright's Giant White Celery, Perfection Tomato, the Lyon Leek, Ne Plus Ultra Runner Bean, Duke of Albany Pea, and Tender and True Cucumber. Mr. T. Wilkins was a good second, and Mr. A. Crossman third. With eight dishes, Mr. Bowers, gardener to T. Holford, Esq., was well first, this successful vegetable grower having Autumn Giant Cauliflower, Student Parsnip, Dobbie's Cheltenham Beet, Rousham Park Onion, Girtford Giant Runner Bean, Wright's Giant White Celery, Duke of Albany Pea, and Perfection Tomato in fine condition. Mr. W. Paulley, gardener to A. W. B. Clarke, Esq., was second, and Mr. S. Kidley third, each having excellent produce. Onions, Potatoes, Celery, Peas, Beans, and Tomatoes were all well shown, and in the various classes the most successful were Messrs. Pragnell, Wilkins, Copp, Bowers, Kidley, Lloyd, Harris, Runnacles, and Crossman.

There were several good non-competitive exhibits, foremost among these being a capital collection of cut Begonias, Dahlias, Poppies, and other flowers from Mr. B. R. Davis, nurseryman, Yeovil. Messrs. Jarman & Co., Chard, also had an extensive exhibit of herbaceous flowers, Gladioli, Phloxes, Dahlias, and other hardy flowers. Mr. Scott, nurseryman, Yeovil, and Merriott made a capital display of plants and flowers. and Messrs. Keynes, Williams & Co., Salisbury, had a fine exhibit of Dahlias.

SANDY.

THE twenty-second annual Exhibition of the popular Bedfordshire Society, nominally horticultural, but which takes under its wings gardening in all its branches, farm produce, poultry, pigeons, rabbits, cage birds, dogs, &c., was held in the Park of Sandy Place on Friday last, and proved even more successful than its predecessors. The day proved fine, and a very large gathering of exhibitors and visitors from far and near was the result, the Show being, perhaps, the best the Society has ever held, the fruit department only showing a falling off owing to the ungenial season.

PLANTS.

In the open class for ten stove and greenhouse plants in flower Mr. W. Finch, gardener to Mr. Alderman Marriott of Coventry was first with very fine and well flowered specimens, the most striking being *Rondeletia speciosa* major, *Stephanotis floribunda*, *Lapageria alba*, *Erica Eweriana*, and *Ixora Duffii*. Mr. Jas. Cypher of Cheltenham had also attractive plants of *Bougainvillea glabra*, *Allamanda Hendersoni*, *Franciscea calycina* major, *Erica Eweriana*, and *Statice profusa*, and proved a close competitor, coming in, however, second. Mr. F. Mould of Pewsey, Wilts, was third, his collection including fine examples of *Miltonia spectabilis*, *Lapageria alba*, and *Erica Jacksoni*. Mr. G. Redman, gardener to J. H. Goodgames, Esq., Eynesbury, Hunts, was also an excellent fourth; all four collections forming a very effective bank, although much too elevated, as is always the case at Sandy. For twelve Zonal Pelargoniums in the open class Mr. Redman was first, his specimens being all in good form and colour, and fair size. In the amateurs' division Mr. Redman also led with six foliage plants, and also for Coleus. For six stove and greenhouse Ferns Mr. G. Claydon, gardener to Mrs. Astell, Woodbury Hall, was first with beautiful and healthy specimens of *Adiantum grandiceps*, *gracillimum* and *cuneatum plumosum*, *Lomaria gibba*, and *Gymnogramma chrysophylla*. Mr. Claydon was also the exhibitor of the six best Fuchsias.

CUT FLOWERS.

These were extensively shown. In the open class forty-eight Roses from Messrs. G. & W. H. Burch, of Peterboro', were remarkably fine, and

as the conditions stipulate for not less than twenty-four distinct varieties, the class constituted an effective test of the best autumnal bloomers, and it was noticeable that Mrs. J. Laing was the most repeated, some five or six beautiful and varied blooms being put up in Messrs. Burch's stand, Ulrich Brunner, Marie Baumann, Alfred Colomb, and Star of Waltham amongst H.P. being also frequently repeated in the stands, and amongst Teas The Bride was most apparent, and in fine condition. Messrs. Burch were well first, Messrs. Paul and Son, Cheshunt, second, and Mr. F. Cant, Colchester, third. Roses from amateurs were sparsely and poorly represented, Mr. G. Moules of Hitchin, however, having a good stand of six. Gladiolus from Messrs. Burrell & Co. of Cambridge were very good, the spikes of enormous size, and the varieties, which included some remarkable seedlings of their own as yet unnamed, were striking and distinct, and the collection was altogether attractive and creditable to Messrs. Burrell, who were awarded first prize for twenty-four spikes. For twenty-four show Dahlias in the open class the competition was strong, Messrs. Heath & Son of Cheltenham leading with fine blooms all well up and well matched, of W. Rawlings, T. J. West, Thos. Hobbs, Mrs. Gladstone, John W. Lord, Henry Bond, Burgundy, and Vice-President, top row; Hon. Mrs. Wyndham, Jos. Ashby, Miss Cannell, Geo. Dickson, Constancy, J. Henshaw, Flora Wyatt, R. Dean, middle row; and Clara, H. Weir, Prince of Denmark, J. Keynes, W. Garratt, Lady G. Herbert, Mr. J. C. Reade, and Mrs. Harris in the front row. Mr. A. Rawlings, Romford, was third with almost equally fine blooms, and Mr. J. Myers, Huntingdon, third, six fine collections being staged. For twelve show blooms in the amateurs' class Mr. G. Arnold, Leighton Buzzard, was to the fore, and for six fancies Mr. H. Glasscock, Bishop's Stortford, led.

The open class for twenty-four bunches of cut hardy herbaceous or bulbous flowers formed a great attraction, Messrs. Paul & Son, Cheshunt, taking first with large masses of the most showy species, Gladiolus purpureo-auratus, Rudbeckia purpurea, Senecio pulcher, Aconitum autumnale, Delphinium conspiciuum being very striking. Messrs. Burrell & Co., Howe House Nurseries, Cambridge, were a very close second, including splendid masses of varieties of hybrid Gladiolus, Montbretia crocosmiflora, Eucomis punctata, Chrysanthemum leucanthemum semi-plenum, Phygellus capensis; Messrs. Laxton Bros., coming third with a choice and showy lot, including Scabiosa caucasica, Chrysomela stylosa, Helianthus multiflorus Soleil d'Or, Lobelia cardinalis Queen Victoria, Echinops ruthenicus, and Eryngium amethystinum. Several good forms of Helianthus multiflorus were shown, but Soleil d'Or appeared to best advantage.

African Marigolds were, as usual, very good here, Mr. R. Burgin, Eynesbury, winning with perfect flowers. He also took first for twelve in the class for French. Asters were poor and unsatisfactory. Double Zinnias from Mr. R. M. Jones, Cambridge, who was placed first with perfect flowers.

The prizes for table decorations fell—the first to Miss Mould, Ickwell House; the second to Miss Richardson of Sandy Rectory; and the third to Miss Orlebar and Miss Barratt of Wellington, for pretty, simple, and effective displays.

FRUIT.

For the collection of eight varieties, Mr. G. Allis, gardener to Major Shuttleworth, Old Warden, had well-finished samples of Hamburgh and Buckland Sweetwater Grapes, Melons, Figs, Peaches, Nectarines, Pears and Cherries, all in prime condition, and was deservedly awarded the premier position, Mr. C. Forbes, Cambridge, obtaining second place, and Mr. J. Myers, Huntingdon, third. For the collection of six varieties, Mr. R. Carter, gardener to Col. Duncombe, Waverley Park, was first with Black Hamburgh Grapes, Melons, Peaches, Apricots, and Morello Cherries, all very creditable samples, and Mr. J. Cook, gardener to Col. Stuart, Tempsford Hall, second. For two bunches of black Grapes (Hamburghs excluded), Mr. Forbes was first, and Mr. Allis second, with Alicantes. For two bunches of Black Hamburghs, Mr. C. Moore, St. Neot's, came to the front, and Mr. F. Fanit, Hertford, second. For white Grapes, G. E. Foster, Esq., Cambridge, was first, and Mr. Allis second, with very fine Buckland Sweetwater. For two bunches of Muscat of Alexandria Mr. C. Forbes had first place and Mr. Foster second. Mr. Allis took first also for cooking Apples and for six pretty and tastefully mounted pots of table plants, the outsides of the pots being neatly dressed with green Box. For scarlet-fleshed Melons Mr. R. Carter was first, and for green-fleshed Mr. Foster. Mr. E. T. Leeds Smith, Sandy, was first for well-ripened dessert Pears. For dessert Apples Mr. R. M. Jones, Cambridge, led, Mr. Foster for Figs, and Mr. J. Laxton, Bourn, Cambs, for a splendid dish of Morello Cherries, Mr. Foster coming first for dessert Plums with Green Gage, and Mr. G. E. Foster second with a striking dish of Golden Esperen, a good sized deep golden yellow Plum of great merit as shown.

VEGETABLES.

There was a remarkably fine display in all departments. Potatoes especially were almost unequalled. For the collection of twelve varieties of vegetables in the amateurs' class Mr. F. Fanit, Hertford, was first, closely followed by Mr. H. Ridgewell, Cambridge; Mr. W. Pepper, Welwyn, coming third, and Mr. J. Myers fourth. For the collection of Potatoes, three sorts round and three sorts kidney, Mr. J. Simkins, Shillington, Beds, was first with remarkably large and perfect specimens of Sutton's Satisfaction and Sutton's Seedling, Abundance, Best of All, Windsor Castle, and Matchless. Mr. P. Meyer, Orwell, was second. For twelve white kidneys Mr. Simkins was again first with wonderful examples of Satisfaction, and also for white and coloured

rounds; and for coloured kidneys Mr. J. Bradford, Thorney, Cambs, came first with Mr. Bresee. In the market gardeners' class Mr. H. Ridgewell led with a grand lot of, in which Laxton's Beds Hero, large Myatt-shaped kidney; Ridgewell's General Stuart, pure white round; Perfect Peachblow, and Snowdrop were especially striking. For twelve kidneys in this class Mr. Ridgewell was first with fine examples of Laxton's Beds Hero, as also for twelve coloured kidneys with Beauty of Hebron, and twelve white round General Stuart; and for coloured round Mr. G. Single, Beeston, was first with Adirondack. For twelve Globe Onions Mr. J. Simkins showed very large and clean examples of Brown Globe; Mr. Dale, gardener to J. N. Foster, Esq., Sandy Place, coming first for White Spanish with Laxton's Sandy Prize, some grand specimens, which variety was also shown by Messrs. Laxton Bros. of Bedford, several of these girthing over 16 inches.

Tomatoes were largely and well shown, the first prize for Reds going to Mr. J. Myers, Huntingdon, for large samples of Trophy; Mr. R. Brown, Somersham, taking second; and Mr. G. Banes, Stratford, Sandy, third for a very even dish of medium-sized rounds. For Yellow Tomatoes Mr. A. Barker, St. Ives, had the best exhibit. Peas were only mediocre; some good examples of Evolution, Autocrat, Sir F. Millbank, and Duke of Albany were shown. Cauliflowers and Beans were perhaps not so good as usual, but other vegetables were shown in excellent form and great quantity.



FRUIT FORCING.

PEACHES AND NECTARINES.—*Earliest Forced Trees.*—The leaves will soon be off, then loosen the trees from the trellis, clean the house, attending to the needful repairs, and paint the woodwork and trellis. The mulching and loose surface soil should be removed and fresh loam with a tenth part of bone dust and a twentieth of wood ashes added, affording a moderate watering if dry. Whatever pruning is required should be done as soon as the house is in order, but if the trees have been properly attended to little work need be performed with the knife. Dress the trees with an insecticide. It is well to wash the whole of the trees by means of a brush with a soapy solution, say 4 ozs. of soft soap to a gallon of water, adding a quart of strained tobacco juice, and if there be any scale add a wineglassful of spirits of turpentine, keeping it well mixed by frequent stirring. In applying insecticides take care to reach every part, and use the brush in such a manner as not to injure the buds. Trees cleansed and neatly secured to the trellis have a better appearance than those left untrimmed until the latest period before starting.

Second Early Houses.—The roof lights have been removed from houses that were started at the new year and ripened fruit in late May or early June. Trees exposed to the weather after the wood becomes firm and the buds plumped are invigorated by the rains and the dews. The border is thoroughly moistened through, premature ripening of the foliage is prevented, and the trees have an early rest, which assists them in retaining the buds and making a good start. Premature bud development is a chief cause of buds falling, aided by a deficiency of moisture at the roots. Trees under fixed roofs should have all the air possible and be duly attended to in watering. Liquid manure assists weakly trees to plump their buds and retain the foliage in health. Moderately vigorous laterals help to keep the roots active, but those that are gross must be removed, and the unduly long pinched back. Laterals must never be allowed to interfere with the free access of light and air to the young wood and leaves, but be kept subordinate to the chief growths.

Midseason Houses.—Trees from which the fruit has been gathered should have the bearing wood of the current year cut out, always excepting parts needful for extension. This will admit of the trees being thoroughly cleansed by syringing, and if necessary applying an insecticide, it being of the greatest importance that the foliage be kept clean and healthy until the buds and wood are thoroughly matured. This will be assisted by the increased light and air. If the growths are too crowded thin them, leaving sufficient young wood for next year's bearing. It is better removed now than at the winter pruning. The remaining parts are benefited and there is less danger of inducing gum. Ventilate freely, and afford water as necessary to keep the soil duly moistened to the drainage.

Late Houses.—The fruit is swelling well and liberal supplies of water are required until the ripening is well advanced, when moderate supplies will be sufficient; enough, however, should be given to maintain the foliage in a healthy state. Trees that are making gross growths and have a tendency to late growth should be marked for lifting. An infallible remedy for indifferent setting and uncertainty of stoning. Any trees that do not ripen the wood well should be curtailed at the roots by taking out a trench so as to detach the roots at about one-third the distance from the stem the trees cover on the trellis, doing it about the end of September or as early in October as the fruit is gathered.

FIGS.—*Planted-out Trees.*—These not infrequently grow strongly, and consequently produce thin crops of fruit. In that case root pruning

may be resorted to, and the roots be confined to a border from 3 to 4 feet in width. If the drainage be defective it will be necessary to lift the trees in the autumn as soon as the leaves commence falling, and replant in fresh soil. Place in 9 to 12 inches of rough stones or brick-bats for drainage, and over them a covering of rather rough lime rubbish, using the finer parts for mixing with the compost in the proportion of a sixth to the bulk of turfy loam, and a twentieth of crushed bones. In replanting ram the soil well about the roots, for short-jointed fruitful wood cannot be so well secured as by a solidified compost. The border must be 24 to 30 inches deep. Should the drainage be good it will only be necessary to confine the roots to the narrow border, removing some of the old soil from amongst them, and top-dressing with fresh loam, with an admixture of lime rubbish and crushed bones as above stated. If the loam be light add a sixth of clayey marl, if heavy a sixth of road scrapings. The proper time to operate in the manner indicated is as soon in late summer or autumn as the foliage gives indications of maturing.

CUCUMBERS.—The shorter days and longer nights necessitate the earlier closing of the house, and the employment of the syringe also earlier, so as to have the foliage fairly dry by dusk. Fire heat, now the nights are colder, will be necessary to maintain the night temperature at 65°, and to maintain a day temperature of 70° to 75°. Afford every encouragement to the autumn fruiters, removing the first fruits and the staminate blossoms and tendrils.

No shading will be necessary, and avoid syringing as far as possible, damping being usually sufficient. Sow from now to the middle of the month for a supply of fruit at Christmas and the new year onwards. Telegraph is a good kind for this, indeed for any sowing, while Cardiff Castle is free and excellent for everyday use. Winter-fruiting plants must have a light and well-heated structure, otherwise fruit cannot be had in perfection with certainty. The plants from appearing above the soil must be kept well up to the glass, so as to insure a sturdy thoroughly solidified growth, which are essential to fruitful plants.

KITCHEN GARDEN.

DIGGING POTATOES.—The early and second early varieties are now matured, and the sooner they are dug and harvested the better. In our case the work will be less interesting than it has been for many years, as the disease has destroyed half the crops in all cases and more in many. As a rule the finest tubers are the worst diseased, and many are reduced to a pulp. The harvesting will have to be done with extra care. Digging should be commenced early on a fine day and continued until midday, then allow the tubers to lie exposed until well into the afternoon, when they will have dried considerably, and it may be readily seen which are free from disease. In good seasons we have generally taken the tubers direct into the shed where they are stored for the winter, but that will not be a safe practice this season, as all will be spread out in an airy shed for several days, and none will be stored until they are quite dry and the sound tubers can be detected; only the tubers for use will be removed to a dark shed, and the smaller ones left for seed will be allowed to become somewhat green and hardened before being stored. It is a common practice to remove all the sound tubers and allow the decayed ones to remain on the ground. They decay there and become mixed with the soil, but we do not approve of this, and gather them up carefully. We object to allowing decayed Potatoes to be placed on the manure heap, and they are thrown away in a corner by themselves. The haulms are also objectionable, and they should be cleared off the surface and burned.

HARVESTING ONIONS.—These are smaller and greener in September this year than they are generally at this season. In many cases the bulbs have hardly begun to form, but will make little more progress, and if the weather is fine and sunny they should be pulled up and laid down with the bulbs facing the sun to dry. Plants that have failed to bulb may be thrown to the rubbish heap. In a few days after drawing them up turn the bulbs and allow the stems to wither, then twist the bulbs off and place them in an open airy shed to dry. We have finished treating a number of ours in this way, and the ground on which they were growing has been hoed deeply and sown with prickly Spinach for winter. Run the Dutch hoe between the rows of autumn sown Onions now coming through the soil.

CAULIFLOWER.—Those who sow their early Cauliflower seed in the autumn must now attend to it. Early London is one of the best for this sowing. Sow broadcast in a narrow bed on a south border, and some of the plants may be left there during the winter, while others may be planted in handlights and frames.

HOEING.—The weeds have been most troublesome this season, and before the damp weather of winter occurs every inch of surface in the kitchen garden should be hoed and cleaned thoroughly. This must be done early in September, because the removal of the weeds allows the light and air free access to the plants, and render them hardier.

LETTUCE AND ENDIVE.—Many Lettuces and Endive are now ready for transplanting. Sufficient for a crop is left in the seed beds or rows, and the others are transplanted. The former will be ready before the latter, and the check experienced in transplanting will cause the latter to follow in succession. Be careful with the roots in drawing up the plants, and plant at once in good soil. They should be put into a warm sunny sheltered position, as they may experience frost and cold weather before they are ready or used, and a favourable site does not entail early protection, which is not always convenient. Plant in rows about 10 inches apart, and see that the slugs and snails do not destroy them, which they are very apt to do at present. Sow more seed of the hardy winter Lettuce.

Thin late-sown Carrots and Parsley. Where young Radish are very thick in the rows thin them to 2 inches apart before they bulb. See that Asparagus stems are staked and tied up. Many roots and plantations are injured by allowing the stems to be blown over and broken by the crown before they have matured. Remove all roots and plants from which the crops have been secured, and on no account allow the vegetable garden to become a wilderness when it is thought the season is over.

PLANT HOUSES.

Zonal Pelargoniums.—These should be placed in cold frames or cool houses, where they can have abundance of air, the atmosphere about the plants being kept as dry as possible. The present cool wet weather is unfavourable to them, and if they are not under cover they will make soft growth, and fail to flower satisfactorily. Supply water carefully in dull weather. Insert cuttings singly in 3-inch pots for flowering early in the year. Supply with stimulants plants that are root-bound and have been flowering for some time. Ivy-leaf varieties should also be placed under cover; select for them a light airy structure. Insert cuttings singly in small pots for flowering during the early spring months.

Bouvardias.—These are not safe outside unless the weather changes and proves warm and dry. Place them in a cool airy house, or in frames where the lights can be thrown off if the weather changes for the better. Plants that have their pots full of roots should be supplied with a little artificial manure once a fortnight.

Chrysanthemums.—Where large blooms are required the plants must be examined at intervals of a day or two, for crown buds will now appear in quantity. As soon as the growths that start from the axils of the leaves can be removed the better, the point of a small knife being most suitable. If the buds are deformed or injured in any way, allow one shoot only to extend from each, and a fair boom will result. Lose no time in removing all but one shoot on each stem, so that the whole energy of the plant can be devoted to its development. Directly flower buds are secured, top-dress the plants with rich material to keep their roots active. Supply them liberally with weak stimulants, and change the food for this purpose occasionally. Avoid strong stimulants, for they are almost certain to burn the roots of the plants, and flat poorly developed blooms will result. Tie the shoots securely, but rather leave 2 or 3 feet to sway about with the wind than 6 inches or a foot, which is almost certain to be broken off and the whole season's work rendered futile. Early flowering varieties should be placed under cover; they will soon come into bloom. Summer varieties that have flowered must be cut back to induce them to produce cuttings, which should be rooted directly they are ready. It is a mistake to delay the propagation of these varieties until cuttings of later flowering varieties are ready for insertion.

Mignonette.—A good number of 5 and 6-inch pots should be filled with loam, one-seventh of manure, and a little sand and seed of the best strains sown thinly over the surface. The seed must only just be covered, and the pots placed in cold frames until germination takes place. Thin seedlings that are large enough; nothing is gained by leaving them thickly together. Expose them to abundance of light and air, to induce dwarf compact growth. Standards and pyramids will need constant attention; be careful that they do not become rooted into the material upon which they stand. Remove the flowers as they appear, and train the shoots evenly over the trellis. Do not attempt to hurry them, for they only grow weakly and will yield puny spikes of bloom in return.

Roman Hyacinths.—Some of these should now be potted; 5-inch pots are suitable for five or six bulbs. For cutting the smaller sized bulbs may be placed thickly together in boxes. After potting place these in a northern position and cover with 4 or 5 inches of ashes. Do not water after repotting, but be careful that the soil is in an intermediate state for moisture before the pots are filled. A few early Paris Hyacinths may also be potted. They are useful for cutting and decoration after Romans are over.

Narcissus.—Where the old double yellow Daffodil and other border varieties are appreciated indoors, no time should be lost in placing them in pots. They will commence to form roots at once, and may then be brought forward into flower under almost natural conditions. Place them under ashes, the same as advised for Hyacinths.



APIARIAN NOTES.

SUPPRESSING THE DISEASE.

SOME clamour for an Act of Parliament, and to have inspectors appointed; but I am inclined to think this will become a sure means of spreading the disease, just as I have witnessed medical officers carry contagion from an infected to a healthy house. No intelligent bee-keeper will care to submit his hives to any inspector who may have just been examining an adjoining infected apiary. For my own part, and I believe many others share my

spirit, I resent any person opening up [our hives, when we consider it would be detrimental under our own supervision. The best means to suppress the disease must come from the bee-keepers themselves. Hitherto there has been much talk about what has been done for the cottager bee-keeper, but we cannot disguise the facts that much which would really benefit the cottager has been kept in the background to benefit the dealers, who had the management of affairs in their own hands. This is a fact so far as shows have been concerned in the past, and we fail to see any improvement for the future.

Happily, bee-keepers are beginning to see things in the true light, and to learn that their neighbours' loss is also their own, and are taking the proper course of stamping out the disease the moment it is discovered. This is the right method, and the only one that will give apiaries immunity from the destroyer, and in the end reward the bee-keeper for his action and attention.

THE WEATHER.

Our bees have now been fully three weeks at the Heather, and with the exception of three nearly fair days the whole time may be described as continuously wet, with occasional clear frosty nights, the daytime giving but chance glimpses of summer temperature, seldom lasting more than five minutes at any time. Although I have no instruments to take the temperature I should say the mean temperature is little above 40° Fahrenheit. The air is light, and the moment the evaporated moisture reaches an evidently cold stratum down falls the rain, often too in torrents. Farmers are in a plight, their hay either lies uncut or in the swathe, and has been so for nearly a month. The Oats are scarcely out of the ear.

HONEY PROSPECTS.

Another week will end the Heather, of which the bloom could not be finer. I had some hopes on the morning of the 28th ult. that honey would be obtained, as the bees started to work in earnest, and a finer sight I have seldom witnessed than the great number of bees pouring out and in from our strong hives, a thing unknown to many modern bee-keepers. But by midday a thunder shower, which lasted three hours, put an end to their labours for the day.

EXPERIMENTS.

I have not been able to make the intended experiment to test varieties of bees and the weighing of hives, for instead of rising in weight they have fallen, the extreme cold being a great means to this.

SOURCES OF HONEY.

The same cause has prevented my tracing the sources from which bees gather honey, and from what flowers a bright green pollen is derived, which seems plentiful all the season, but I have never witnessed bees collecting it.

FERNS YIELD HONEY.

Sometimes the common Bracken yields large quantities of honey, as do some kinds of grasses, but the low temperature prevents the secretion, and of course precludes the possibility of my being an eye witness to bees collecting it.

CONDITION OF THE HIVES.

It is perhaps of more interest to bee-keepers to know that hives that were sent to the Heather in good condition are those only that will rise much in weight should they get a chance. Such hives have lost few bees, and drawn no worker brood, whereas those that had little food beside them have done both, and many colonies are reduced to mere handfuls of bees, and it is worth emphasising the fact that it holds good at all seasons, notwithstanding the assertions of modern ideas to the contrary.

SWARMING.

Swarming and non-swarming bees may be placed in the same category. I have in an earlier article dealt with this subject, and

lately stated that bees would, in all probability, swarm at the Heather from the cause I have pointed out in these letters, and have frequently endeavoured to show, amidst much opposition, that bees will swarm whether they be crowded or not, and that Carniolians do not swarm more readily than other varieties. Although the weather has been wintry, a good many hives have swarmed, the majority being what their owners term original black bees, while only one first-cross Carniolian has swarmed. The causes and particulars I need not repeat, but what is worth mentioning is that our bees stand on a dry site, which absorbs much heat, neither high nor very low, and there is scarcely a dead bee to be seen, while of those in the lowest part of the valley, where the wind sweeps along in strong gusts, thousands are chilled to death. The most sheltered situations are mostly to be found at some distance from the base. By the time this appears in print the honey season of 1890 will be closed, and if without profit not without lessons, the loss being neither the fault of the bees nor of their owners.—A LANARKSHIRE BEE-KEEPER.



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Lobelia Omen (G. H.).—The flowers were spoiled through not being firmly fixed in the box, but the colour is similar to that of the above variety which is grown to some extent in the London parks, though does not become very popular.

Tomatoes Diseased (J. H.).—The plants are no doubt infested with the fungus (*Phytophthora infestans*). There is no remedy, but it is well to destroy all the infested plants and fruit, and have a change of seed, planting in fresh ground well dressed with quicklime. The season has been a bad one for outdoor Tomatoes, inducing a grossness of plant highly favourable to the disease.

Overwatering Vine Borders (W. E. T.).—Shanking will certainly be induced by a saturated state of the border, but it would not cause the Grapes to crack unless the house had been kept unusually arid, and then closed so as to cause the deposition of moisture on the Grapes. Guttering ought to have been put up at first, but you will have to encourage more growth in the Vines, yet not having more foliage than can have full exposure to light and air, and be careful not to over-crop them, which is a common cause of shanking. Are you sure the border is well drained? It must be seen to, and the Vines if the roots are deep should be lifted and laid in fresh soil near the surface. This can be effected without loss of crop by lifting the roots in the inside border one year, and those in the outside border the next, as soon as the leaves begin falling.

Larva on Pear (A. B. D.).—This is the slimy black larva or grub of the Pear tree slug, which Curtis calls *Tenthredo adumbrata*, allied to a similarly troublesome species that infests the Cherry. It generally makes its appearance about the end of August, and if unmolested will continue to feed till October. Wall trees are particularly attacked by it, and the effect of its feeding numerous upon the leaves is that the elaboration of sap is interfered with, and the fruit falls off. It clings tightly to the leaves, protected by its slimy secretion, and appears to be untouched by birds. After four changes of skin it becomes adult, and descends to the earth, where it forms a cocoon. From this emerges an active fly of sawfly tribe, about three lines long. There is no better remedy for it than dusting well with quicklime, repeating if needful. Tobacco water will also destroy them, and syringing the trees with strong soapsuds.

Prizes at Shows (R. D.).—The rules to which you refer are conflicting, and need careful revision. According to rule 4 the judges have the power "to recommend prizes for any article they may deem worthy," which evidently means that the Committee will decide whether they can be granted or not, as is customary at other shows. The question for the Committee to decide is not concerned with the "merit" of the exhibit, but as to whether the award is in accordance with their rules. Without seeing a schedule we cannot express an opinion upon this subject.

Epacris (G. L.).—For soil good fibry peat must be provided, and sharp silver sand mixed with it to keep it open. Efficient drainage, efficient watering, and firm potting are also necessary. When once plants which are firmly potted in peat become dry ordinary waterings are not sufficient to moisten the soil thoroughly. They must be watered again and again until the water pours from the hole in the bottom of the pot. Indeed if the dryness is allowed to go too far there is nothing for it but steeping the pot in the cistern until the air balls, which are displaced by the water, cease bubbling up. After the ball is thoroughly soaked no more water should be applied until necessary, when a thorough supply should be given. This is one of the secrets in successful Epacris growing. Another, as we have said, is firm potting. Another consists in growing them in an airy greenhouse, where as little fire heat as possible is used, and where a constant circulation of air is kept up on all favourable occasions. After the flowers have faded the growth should be cut back. Erect kinds should be cut back close to the old wood, and drooping kinds scarcely so far back. After they are cut back they should be kept rather close until they begin to grow again, when, if necessary, they should be potted into larger pots. After they have fairly recovered from cutting back and potting they should be plunged in ashes out of doors for the summer. By the end of September they should again be housed. They are rather difficult to raise with ordinary appliances, and raising plants from cuttings is hardly worth an amateur's trouble, for your flowering plants may be purchased very cheaply. The amateur should purchase his plants when in bloom, so as to suit his taste, or a respectable nurseryman will generally advise him as to the best kinds to buy. We, however, name a dozen good varieties. E. Butterfly, E. campanulata and campanulata alba, E. Fireball, E. hyacinthiflora fulgens, E. Ingrami, E. impressa, E. Lady Panmure, E. Lowi, E. miniata splendens, E. odorata alba, E. Sunset, E. Vesta.

Gloxinias from Leaves (R. M.).—Various methods are followed in multiplying Gloxinias by this means. Some make incisions in the main veins on the lower surface of the leaves, and lay them flat on a bed of silver sand in the propagating house. Over the cuts small pebbles are placed to prevent the leaf shifting until roots are formed, and in the course of time small crowns are formed, and each makes separate plants, which will flower the following summer if carefully ripened and preserved over the winter. Another plan is to cut up the leaves into slips, following the direction of the veins, and running the knife out without damage to the margin. This operation should be performed with a very keen edged knife, so that the tissue of the leaves is not lacerated. By this means the leaves may be divided into a number of wedge-like pieces, narrowing to the bases. These are inserted into pots filled with silver sand intermixed with a little peat soil; and after moistening the body of the compost cover with a bellglass, or place the tops inside the glass case if the house is furnished with such. Keep moderately close, and never wet the leaves while applying water to the roots, at the same time being careful that the cuttings do not suffer from damp. Under such favourable conditions roots will soon be formed, to be succeeded by bulbs and minute leaves; but it is the best plan to pot off singly as soon as well rooted, so that the progress of the two latter is not checked, and that plump tubers may be produced before the fall of the year. After the rooted portions of the leaves have been put separately into pots, have them watered and returned to the place they formerly occupied, and give them the same watchful attendance as hitherto, not once allowing the soil to get dried, which would permanently cripple their growth, until indications of their going to rest are shown at the end of summer. No more water will be required after such symptoms, except enough to prevent the soil from getting dust dry, and thereby causing them to shrivel.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens should be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (T. C. S.).—1, *Lycasteria formosa*; 2, *Hieracium aurantiacum*; 3, *Echinops ruthenicus*; 4, *Erigeron speciosus*; 5, *Sedum spectabile*. (W. W.).—1, *Adiantum caudatum*; 2, *Asplenium bulbiferum*; 3, *Davallia Mooreana*.

COVENT GARDEN MARKET.—SEPTEMBER 3RD.

MARKET quiet, with no alteration.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, $\frac{1}{2}$ sieve	3	6	to	6	0	Lemons, case	10	0	to 15 0
„ Nova Scotia and						Melons, each	1	0	2 0
Canada, per barrel	0	0		0	0	Oranges, per 100	4	0	9 0
„ Tasmanian, p. case	0	0		0	0	Peaches, dozen	1	0	8 0
Grapes, per lb.	0	9		8	0	Plums $\frac{1}{2}$ sieve	0	0	0 0
Kentish Filberts, 100 lbs.	50	0		52	6	St. Michael Pines, each..	2	0	6 0
„ Cobs	55	0		57		Strawberries, per lb.	0	0	0 0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.		
Artichokes, dozen	0	0	to	0	0	Mushrooms, punnet ..	1	6	to	2	0
Asparagus, bundle	0	0		0	0	Mustard & Cress, punnet	0	2		0	0
Beans, Kidney, per lb. ..	0	3		0	0	Onions, bushel. . . .	3	0		4	0
Beet, Red, dozen	1	0		0	0	Parsley, dozen bunches	2	0		3	0
Brussels Sprouts, $\frac{1}{2}$ sieve	0	0		0	0	Parsnips, dozen	1	0		0	0
Cabbage, dozen	1	6		0	0	Potatoes, per cwt. ..	3	0		4	0
Carrots, bunch	0	4		0	0	„ New, per lb.	0	0		0	0
Cauliflowers, dozen. . .	2	0		4	0	Rhubarb, bundle	0	2		0	0
Celery, bundle	1	0		1	3	Salsafy, bundle	1	0		1	6
Coleworts, doz. bunches	2	0		4	0	Scorzonera, bundle ..	1	6		0	0
Cucumbers, doz.	2	0		3	6	Seakale, per bkt. ..	0	0		0	0
Endive, dozen	1	0		0	0	Shallots, per lb. ..	0	3		0	0
Herbs, bunch	0	2		0	0	Spinach, bushel	1	0		2	0
Leeks, bunch	0	2		0	0	Tomatoes, per lb. ..	0	3		0	6
Lettuce, dozen	0	9		1	3	Turnips, bunch	0	4		0	0

CUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.		
Arum Lilies, 12 blooms ..	2	0	to	4	0	Lilium, various, 12 blms.	0	6	to	1	0
Asters, per bunch, French	0	9		1	0	„ longiflorum, 12 blms.	2	0		4	0
„ English, 12 bunchs.	3	0		6	0	Marguerites, 12 bunches	2	0		6	0
Bouvardias, bunch ..	0	6		1	0	Maidenhair Fern, dozen					
Carnations, 12 bunches ..	4	0		6	0	„	4	0		9	0
„ 12 blooms ..	1	0		2	0	Mignonette, 12 bunches..	1	0		3	0
Calceolaria, doz. bunches	3	0		6	0	Pansies, dozen bunches ..	1	0		2	0
Chrysanthemum, 12 blms.	1	0		3	0	Pelargoniums, 12 trusses	0	9		1	0
„ 12 bunches	4	0		12	0	„ scarlet, 12 bunchs	3	0		6	0
Cornflower, doz. bunches	1	6		3	0	Pinks (various), doz. bchs.	3	0		6	0
Dahlias, dozen bunches..	2	0		4	0	Primula (double) 12 sprays	0	6		1	0
Eschscholtzia, 12 bunches	0	0		0	0	Roses (indoor), dozen ..	0	6		1	6
Eucharis, dozen ..	3	0		4	0	„ Moss (Eng.), 12 bch.	0	0		0	0
Forget-me-not, doz. bch.	1	6		4	0	„ Red (Eng.), 12 bch.	2	0		6	0
Gardenias, 12 blooms ..	2	0		4	0	„ Red, 12 blooms ..	1	0		2	0
Gladiolus, 12 bunches ..	4	0		9	0	„ Tea, white, dozen..	0	6		2	0
Gypsophila, per bunch, Fr.	1	0		1	6	„ Yellow	2	0		4	0
Iris, various, dozen bunchs.	0	0		0	0	Stocks, dozen bunches ..	3	0		6	0
Lapageria, 12 blooms ..	2	0		4	0	Sweet Peas, 12 bunches	1	6		3	0
Lavender, dozen bunches	3	0		5	0	Tuberoses, 12 blooms ..	0	3		0	0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.		
Aralia Sieboldi, dozen ..	6	0	to	12	0	Geraniums Scarlet, p. doz.	2	0	to	6	0
Arbor Vitæ (golden) doz.	6	0		8	0	Heliotrope, per doz. ..	4	0		6	0
Asters, dozen pots	3	0		6	0	Hydrangea, doz. pots ..	9	0		18	0
Calceolaria, per doz. ..	4	0		6	0	Lilium laucifolium, doz.	9	0		18	0
Chrysanthemum, per doz.	6	0		24	0	„ longiflorum, doz. 12	0			24	0
Climbing Plants, various,						Lily of the Valley, 12 pots	0	0		0	0
dozen pots	4	0		9	0	Lobelia, per doz. . . .	0	0		0	0
Cyclamen, per dozen ..	0	0		0	0	Marguerite Daisy, dozen	6	0		12	0
Deutzia, 12 pots	0	0		0	0	Mignonette, per dozen ..	4	0		6	0
Dracæna terminalis, doz.	24	0		42	0	Mnsk, per dozen	0	0		0	0
„ viridis, dozen	12	0		24	0	Myrtles, dozen	6	0		12	0
Epiphyllum, per dozen ..	0	0		0	0	Nasturtiums, dozen pots	0	0		0	0
Erica, Cavendishi, per pt.	0	0		0	0	Palms, in var., each. . .	2	6		21	0
„ various, dozen	12	0		18	0	Pelargoniums, per doz. . .	6	0		12	0
Euonymus, var., dozen ..	6	0		18	0	Rhodanthe, per dozen ..	4	0		6	0
Evergreens, in var., dozen	6	0		24	0	Saxifraga pyramidalis,					
Ferns, in variety, dozen..	4	0		18	0	per dozen	0	0		0	0
Ficus elastica, each. . .	1	6		7	0	Spiræa, 12 pots	0	0		0	0
Foliage plants, var., each	2	0		10	0	Stocks, per doz.	0	0		0	0
Fuchsia, per doz.	4	0		9	0	Tropæolums, various, per					
Geraniums, Ivy, per doz.	3	0		6	0	dozen	0	0		0	0



CHANGES IN AGRICULTURE.

It has been laid down that changes in agriculture are merely the result of circumstances, and are not to be regarded as a sign of progress. To this dictum we take decided exception, for if such changes are made with the judgment and caution which mark the actions of men of light and leading in agriculture, then assuredly they mark time in progress better than anything else can do. No better proof of this can be had than the agricultural returns of Great Britain just issued by the Agricultural Department, for they show change and real progress in a manner not to be mistaken or set aside by any carping critic.

Of the changes in cropping the most remarkable is the decline of Wheat and Barley, and the steadily progressive increase in the culture of Oats. We need hardly remind our readers how persistently we have advised the extension and improvement of Oat cultivation, and it is indeed gratifying to find our views so entirely in accord with those of farmers generally. An increase this year of 14,294 acres of Oats on 1889, and of 6452 in that year on 1888 shows conclusively that Oats bid fair to become our leading cereal. To emphasise this view we have a decrease of 63,018 acres of Wheat in comparison with last year, and 177,901 acres less than 1888, and 10,352 acres of Barley less than 1889. The Wheat area is the smallest since 1887, and if the average computation of the

yield of 28½ bushels per acre proves correct the total yield will only be 68,010,576 bushels, which points to a probability of some advance in the price of home-grown Wheat. But there are so many outside influences upon the Wheat trade that prices must always remain speculative. Importers are keen to take advantage of an increasing demand for Wheat in this the best market of the world, and we may rest assured of a full supply to meet any demand which may arise. We only hope that any such momentary advance may not induce farmers to sow more Wheat this autumn. Only those who have really good mixed soil should grow Wheat extensively. By high culture on such land a yield far exceeding the average may be had, and a profit made sufficiently high to render it worth while going on. The heavy land men who have the land down to pasture will do far better for themselves and the country if they keep it down, and strive to improve it to the utmost of their power.

Certainly live stock is increasing in no uncertain manner. The returns show a cattle total of 6,508,632, which is the highest number ever reached in this country, being 369,077 more than 1889, in which year there was only a slight increase upon the numbers of 1888. Flocks are improving, the total of sheep and lambs being 27,272,459, or 1,640,439 more than last year, but they have, as yet, by no means reached the numbers returned in 1874. Pigs, too, are increasing, the total number being 2,773,609, or an advance upon 1889 of 262,806, all which tends to show a healthy reaction and decided improvement in farming practice. Well said *Bell's Weekly Messenger* last week, that as breeding and feeding of cattle is the most remunerative side of the farming balance sheet, it is gratifying to find agriculturists producing something that is more likely than corn to yield a profit. It attributes the increase primarily to favourable calving, yearning, and littering periods, and secondarily to plenteousness of keep and comparative absence of disease.

We can hardly agree with either conclusion, and rather take the practical view that the steadily increasing profits upon live stock act as an inducement to rear more, and to bestow more care upon both the breeding and general management of all farm animals. It is a matter beyond question, that in the past, heavy losses have been caused by mismanagement and carelessness in the treatment of live stock. Sweet, if severe, are the lessons of adversity, it brings out the sterling worth and latent power of the British character as nothing else can do. Often are we for the moment left behind in the race, but the way lost is invariably recovered, and then we can hold our own with the best.

Taken as a whole the returns afford matter for congratulation, and we certainly take them as a sign of improvement. Hopefully may we look forward to less of cattle buying, and more, much more, of cattle breeding throughout the country. There can be no reason why cattle cannot be bred just as well as sheep in what are known as the great corn-growing districts. More and more do we hope to see every farm become self-contained, growing much of its own food, and breeding all its own live stock. A full head of stock is better than a comfortable balance at the bank, for upon it now, at any rate, we can realise principal and interest that is much higher than we ever had from our bankers.

WORK ON THE HOME FARM.

Corn stacks are being built whenever we have enough fine weather to dry the sheaves, but there has been no regularity about harvest work this year. Hardly a day has closed with those signs of a bright morning which we have in really fine settled weather, and extra care has been necessary in every detail of the work. Often has the reaper had to wait for wind and sun to dry the corn; the shocks have been made with the heads pressed closely together, the tie or knot of the bands placed inside to prevent the accumulation of damp in it, the sheaves set sufficiently aslant to throw off rain quickly and to allow free passage for a current of air between them. Small shocks are a necessity this year, and they are opened awhile before the carting to get the bottoms of the sheaves quite dry. A steep slope is given to the stack roofs, as the corn is then safe for a few days should any hindrance arise in the thatching, but the thatch should be got on as quickly as possible, and the work must be done well enough to withstand high wind. The sides of every stack should be trimmed closely, and the trimmings either given to the pigs or placed with the rakings. This is really an important matter, for an

untrimmed stack attracts sparrows so long as a loose ear of corn can be got at, and Barley ears so exposed become so discoloured as to spoil the sample. So trim, say we, however soon you may intend threshing.

Sparrows will come to the rick yards as the corn fields are cleared, and if a special effort is to be made to destroy them it can easily be managed during the next two or three weeks by the judicious use of a little poisoned grain, so placed that poultry cannot get at it. Both rats and sparrows only exist on sufferance, and it is simple nonsense to say there is any difficulty in the destruction of these pests.

Foul stubbles are common enough this autumn, and the best way of treating them is to plough or skim the surface slightly. Clear off the weeds with light harrows, and then leave the land long enough for germination of weed seeds, which will only require a few days in the warm moist soil. This will tend materially to clean the land and keep down expense in corn hoeing next spring. The season has been most favourable to the growth of green crops, and much White Mustard has been ploughed in.

FARMING OUTLOOK IN NORTH LINCOLNSHIRE.

THIS harvest month of August, 1890, brought not brilliant sunshine, but cold boisterous winds, heavy rains, sharp hailstorms, with occasional gleams of brightness, which serve to remind us that there is a sun somewhere if not here. Harvest began generally on the 15th ult., and the Wheat crop is here more than an average as regards straw. The ears are well set with grain, and only needed a little more sun to develop a plump bold grain. As it is, the threshing machine will bring to light a good proportion of poor thin, "hen corn." "Square Head" is well filled to the very top of the ear. Hybrid King begins to taper off about the middle.

Of the Barleys a good report can be given. Quantity and quality both good, and a fine upstanding crop. A new variety, introduced by Carter, and called "Goldthorpe," seems to be the "what's wanted" of this brewers' cereal. Colour will be determined by the weather of the next week or ten days. Where Barley was forward the high winds of August 15th did great damage, severing the bold heads as ruthlessly as ever French guillotine during the Reign of Terror.

If Dr. Johnson of dictionary fame could see a field of Oats not a stone's throw from where we write, he would surely change his opinion, and allow that they were good enough for men as well as for horses. Taking the district through they are a capital crop. If there are Oats in abundance for the horse, sheep, too, will have a good time among Turnips, and Webb's Mangolds are almost as large as the seductive catalogue picture. A few cases of "finger and toe" are to be found in some Turnip fields, and it is most difficult to define a cause, as this disease crops up under varied management and on varied soils.

Then as to the Potato crop. Up to August 1st the prospect was wonderfully good. About that date began a week of close muggy weather, which produced the fatal black spot on the leaf; the haulm was rapidly giving way, and was only checked by the gale of the 15th, which was so disastrous to the Barley. The weather of the last few days will, it is to be feared, cause any latent disease to develop rapidly. Regents, Hebrons, and Elephants are the most affected; Imperators and Magnums but slightly. However, it is hardly possible to give as yet a full and correct estimate of the Potato crop of 1890. When the bulk of the corn is garnered no doubt there will be a move in the Potato market, as dealers have already been seen lurking about the villages.—PARTS OF LINDSEY.

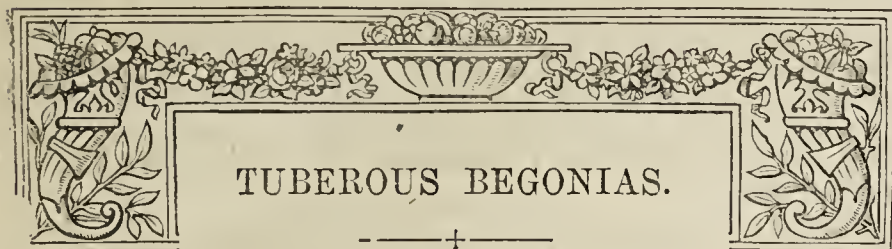
METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.
Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain
1890. August.		Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature.		
			Dry.	Wet.			Max.	Min.	In sun.	On grass	
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.	
Sunday	24	29.720	56.2	50.7	W.	59.7	65.7	43.9	113.1	41.9	0.025
Monday	25	29.681	55.2	51.3	S.	58.2	66.0	42.8	110.3	41.0	0.090
Tuesday	26	29.533	54.2	51.9	S.W.	58.2	62.9	48.1	101.8	45.2	0.181
Wednesday	27	29.436	53.2	52.2	S.W.	57.8	65.6	49.1	109.4	47.1	0.083
Thursday	28	29.753	57.9	52.7	W.	57.0	67.6	47.9	112.1	45.9	—
Friday	29	29.909	54.6	51.2	N.E.	57.8	65.0	51.8	113.7	51.7	—
Saturday	30	30.054	53.4	48.8	N.W.	57.3	62.4	41.1	107.2	39.9	—
		29.735	55.7	51.3		58.0	65.2	46.2	109.7	44.8	0.332

REMARKS.

21st.—Bright and sunny till 1 P.M.; thunder in afternoon, and shower at 5.30 P.M.
25th.—Bright and sunny till 4.45 P.M., then spots of rain, with a fresh breeze; dull night, with shower.
23rd.—Dull throughout; sharp shower at noon, and heavy rain at 2.45 P.M.
27th.—Dull early; bright till 3 P.M., then heavy rain and dull evening and night.
28th.—Bright, sunny day; fine night.
29th.—Dull early; bright day and night.
30th.—Bright all day and night.
Quite an autumnal week, the temperature having fallen to about that of the latter part of September.—G. J. SYMONS.



THE improvement of plants during the past half century has very deservedly received much attention from horticulturists, and the grand advances that have been made in many genera afford abundant evidence of the success which has attended well-directed efforts. Careful cultivation, judicious crossing, and thoughtful persevering selection have yielded most satisfactory results, the number of usefully ornamental plants being largely increased and their beauty greatly diversified. Many instances of this could be given, but a few will suffice, one of the most striking, perhaps, being the Clematises, the progress of which was noted some time since in these pages. Pelargoniums, especially the Decorative and Zonal sections, have also advanced greatly; while amongst fine-foliaged plants may be instanced the Dracenas, Crotons, and Coleuses, all of which have progressed considerably in recent years. There is, however, another genus of flowering plants—the Begonia, that has profitably employed the attention of hybridisers; but it is in one section alone—namely, that including the Tuberous species and varieties, that the most astonishing results have been obtained, and to a consideration of the means by which such success has been achieved the following notes are devoted.

All who have visited Forest Hill, Reading, or Swanley during the past and present months have been greatly attracted by the display of Tuberous Begonias there provided, which well illustrate the excellence that has been attained with these plants. Visitors have been surprised, not only at the brilliancy of the colours and the abundance of flowers, but also at the great size of the individual blooms, the breadth of the petals, and the symmetrical form which distinguish so many handsome varieties. Contrasting these with the narrow-petalled earlier forms shows at a glance the progress that has been made, and reminds us forcibly of the similar difference between the early Zonal and bedding Pelargoniums and those finely formed varieties at present in cultivation. Attention has further been paid to the habits of these Begonias, and there are now two well-marked groups—namely, those of erect growth and those with slightly drooping stems, though gradations may be found between the extremes. The first-named may be again subdivided, according to the height of the plants, into tall, medium, and dwarf varieties, all having their particular advantages and uses. Some advance has also been made in obtaining a race with ornamental foliage, though at present this is chiefly confined to the Pearcei type with yellow or buff flowers, yet greater success is confidently expected, and will doubtless be attained. Hundreds of varieties, all more or less distinct and beautiful, have received names and been sent out by nurserymen; but it is now found that seed saved from a good strain yields so many excellent varieties that some firms have discontinued naming these plants, their efforts being directed to rendering the strain generally as meritorious as possible. So that now the purchaser of a packet of seed can rely upon obtaining varieties quite equal to some of the best named forms, and there is the possibility even that something superior may be secured. At some nurseries many thousands of seedlings are raised every year, and these are planted out in prepared beds for trial, all that are really worthless being discarded. In the autumn the young plants are lifted, the small tubers being dried and sold like other tuberous or bulbous plants. A great demand exists

for these, as they come within the means of many who cannot afford the higher-priced novelties.

Having considered the present characteristics of the Tuberous Begonias, it may be well to briefly allude to the means by which so high a degree of merit has been attained, and the original forms that have been employed by hybridisers in producing such satisfactory results. Although the varieties and hybrids are so numerous, the species that have contributed to their formation are comparatively few, and, moreover, are nearly all of recent introduction. The lofty Andes of South America is the chief home of these Begonias, distinguished by possessing a tuberous rootstock and herbaceous fleshy stems; but one of the latest introduced, *B. socotrana*, which also shares these characters to some extent, is, however, as the specific name signifies, a native of Socotra. This will doubtless play an important part in future attempts to improve or vary the Tuberous Begonias, and already some highly important results have been obtained in that direction. The other species—namely, *B. octopetala*, *B. boliviensis*, *B. Veitchi*, *B. Pearcei*, *B. rosæflora*, *B. Clarkei*, *B. geraniifolia*, *B. Davisi*, *B. Frœbeli*, and *B. cinnabarina*, are found on the Andes of Peru, Ecuador, or Bolivia at high elevations, frequently up to 10,000 feet above sea level. The oldest of these is the greenish white-flowered species *B. octopetala*, which appears to have been introduced from Peru about 1835, but was subsequently lost and reintroduced by M. Roezl. This is chiefly interesting as one of the oldest of the section, for it has not been of great service to hybridisers. Next in order of introduction is another rather unimportant species, *B. cinnabarina*, a native of Bolivia, with vermilion flowers, which made its appearance about ten years later than the preceding. *B. boliviensis* is well known, and has been largely employed in crossing with other forms. It is a Bolivian species, and was originally found by Mr. Weddell, but not introduced until some years after—namely, about 1857.

B. Pearcei, a comparatively dwarf form with large yellow flowers, dark green velvety leaves, veined with a lighter hue, and reddish on the under surface, is also a Bolivian species, for which English cultivators are indebted to Messrs. J. Veitch & Sons of Chelsea, by whom it was sent out twenty-five years ago. It was found by the traveller Mr. Pearce, whose name it bears. Most of the yellow-flowered varieties owe their origin to this species. *B. Veitchi*, also a dwarf form, has bright scarlet flowers, which are produced freely, and it has been very useful in giving rise to a race of dwarf but vigorous habit. The petals are rounded, imparting a symmetrical appearance to the blooms; the leaves are bright green, broad, and rounded in outline. This was found in Cuzco, Peru, at the great elevation of 12,000 feet, whence it was introduced by Messrs. Veitch about 1867. Two other pretty species allied to the preceding, and resembling it in habit and form of flowers, are *B. Clarkei* and *B. rosæflora*, both from Peru; but the *B. Clarkei* inhabits rather warmer regions than *B. Veitchi*, though *B. rosæflora* is found at a similar altitude. The last-named has large rounded flowers of a fine clear rose colour, and its parentage may be traced in many of the varieties that are now grown with flowers of a like tint. *B. Clarkei*, which is named in honour of Colonel Clarke, who first brought it into general notice, has large scarlet flowers, but not quite so brilliant as *B. Veitchi*. Both these appeared in England about the same time—namely, in 1866 or 1867. Later still—namely, from 1874 to 1876, *B. Frœbeli* and *B. Davisi* were added to the list of species in this section, and both have contributed to some extent to the improvement of varieties and hybrids. *B. Frœbeli* is of compact habit and somewhat related to *B. cinnabarina*, having scarlet flowers freely produced. It was introduced by MM. Frœbel & Co. of Zurich from Ecuador. *B. Davisi* is a charming dwarf species, having neat light green leaves, red on the under surface, and rich in scarlet flowers of moderate size, but good form and extremely abundant. Small plants of this are highly ornamental for cultivation in pots, and

the fine double form obtained a short time since is a most valuable plant.

The intercrossing of these species and careful selection from the numerous seedlings raised have produced with surprising rapidity the handsome race of plants which are now becoming such general favourites for decorative purposes either in pots, baskets, or for bedding out, and their popularity is still increasing. Selections of varieties have been frequently given in these pages, and it is not necessary to repeat these now, but a glance may be given to the earliest of the hybrids obtained, though it would be almost impossible to trace the parentage of all those cultivated at present. One of the first hybrids secured, and certainly the best, was *B. Sedeni*, which was obtained at Messrs. Veitch's Chelsea Nursery by Mr. Seden as the result of a cross between *B. boliviensis* and an unnamed species. This was subsequently employed as a parent with *B. boliviensis*, *B. Veitchi*, *B. Clarkei*, and *B. Pearcei*, giving rise to *B. Chelsoni*, *B. Stella*, *B. Vesuvius*, *B. Model*, and *B. Chambersi* respectively, the last two resulting from two crosses with *B. Pearcei*, all improvements of more or less value. *B. Veitchi* crossed with *B. boliviensis* resulted in the production of *B. Chelsoni*, and this with *B. Sedeni* produced the variety *Acme*. Thus the first hybrids raised have been repeatedly utilised by intercrossing with each other, the diversity and excellence of the progeny being steadily and satisfactorily increased.—L. C.

GATHERING APPLES AND PEARS.

THIS is apparently a very simple matter, and so it is, but there are in connection with it a few points of the utmost importance to which attention must be given if we would store the fruit in sound condition, and not destroy the fair promise of another crop, which most trees in full bearing give to us now in a clear and unmistakeable manner. Go to any tree laden with fruit, and close to the junction of fruitstalk and branch you will see one or two plump buds, which if the fruit is plucked roughly or carelessly will most probably be broken off with it. Those buds contain the embryotic blossom of another crop, which is thus destroyed through ignorance or carelessness.

It is the intermediate and late sorts of fruit that require most care. Keswick Codlins and Kerry Pippins almost fall into our hands if we touch them now, but the fruit of the later ripening sorts requires careful and repeated examination, for the time of gathering is entirely dependent upon the nature of the season, and it is certain to be a little later than usual in such a cold wet one as the present is. If by a gentle turn upwards some of the fruit parts readily from the tree then the whole of it may very soon be gathered, but it should not be forgotten that a week or two longer on the tree may be conducive to the better keeping of the fruit, and it should be so treated upon all dwarf-spurred trees, which are not swayed by high wind. The fruit of standard trees should of course be gathered as soon as possible, but it is as well to be on one's guard against premature gathering, and the resultant shrivelled fruit.

There should be a few cordons of early Pears on walls on every garden, from which to obtain a full supply of really fine fruit. A large quantity of such fruit is never wanted for the ordinary supply of a family, and the fruit from a wall tree is always superior to that from a plantation bush or pyramid. The first ripe fruit is to be had near the top of the cordon, and so on to the bottom, and by gathering a few fruit every day or two the brief season of even Summer Doyenné is lengthened. Gardeners who have to supply the wants of a large establishment should be on their guard with the Pears of summer and early autumn, and take care that only fresh sound fruit goes to table. It is neither pleasant for themselves or their employers that a tempting looking dish of Jargonelles should prove uneatable, and the disappointment is all the greater from the fact of a really good Jargonelle being so delicious. Every good old garden contains a Jargonelle Pear, a Moor Park Apricot, a Green Gage Plum, a Brown Turkey Fig, a Grosse Mignonne Peach, a Morello Cherry, an Elruge Nectarine, and a Ribston Pippin Apple; and a good supply of all these grand old standard sorts of fruit is much appreciated in a new one.

I must not close this note without a word of warning as to the importance of great care in the handling of fruit. Depend upon it the bushels of rotten fruit taken from so many fruit stores during winter is not owing so much to natural as to premature decay, caused by bruises received in the gathering or storing. Only

for cider making should Apples ever be gathered into a sack slung under the left arm. Every fruit required for dessert or cooking should be handled precisely as though it were an egg, contact with any hard substance or with other fruit involving a risk of bruising that should always be remembered by the fruit gatherer. A well-stored well-arranged fruit room is indeed an interesting and attractive sight, replete with instruction to the grower, and with satisfaction to all concerned in it. That satisfaction will be complete if the building itself has been constructed on sound principles, and is really calculated to preserve the fruit well.—EDWARD LUCKHURST.

GLADIOLUS FOR CUTTING.

No autumn flower is more valuable than the *Gladiolus* for vase decoration. All are useful, but there are some which are better adapted for cutting than others. The varieties of the *Gandavensis* section are the most generally grown, and any of these are useful for cutting from. Care is necessary in making selections to choose those which have a strong constitution. Early ripening sorts will be found to be almost without exception of a vigorous habit, and continue for years in health and strength, while most late-flowering varieties under ordinary cultivation deteriorate, until in many cases they disappear altogether. Many of the newer sorts with extra large flowers possess excellent constitutions, and while small-flowered old varieties are beautiful in their way, they are generally far behind the latter productions. *Pasteur*, *Amitié*, *Dalila*, *Enchantresse*, *Opale*, *Baroness Burdett Coutts*, *Dr. Bailly*, *Celimene*, *Eugène Souchet*, *Sultana* are varieties of capital constitution, with long spikes and very large flowers. Of smaller dimensions are the following, some of which are, however, very beautiful:—*Caprice*, *Horace Vernet*, *Shakespeare*, *Bicolore*, *Penelope*, *Mascarille*, *Panorama*, *Lady Bridport*, *De Brazza*, *Flamboyant*, *Le Phare*, *Brenchleyensis*, and *Diamant*, are varieties I particularly like.

Of even greater beauty than the varieties of the above section are some of the hardy hybrids of the *Lemoinei* type. The later productions are almost as large as some of the *Gandavensis*, but I do not know that these are recommendable on that account. *John Laing*, for instance, is of large size and brilliant colouring, but I do not think it is so good for decorative purposes as the older *Bossuet*. The best of the large flowered sorts I am acquainted with are *W. E. Gumbleton* and *Lafayette*. The former has a very long stem, and can be employed most effectively for the decoration of very large vases in large apartments. For brilliancy of colouring *M. Leroque* is very noteworthy. But the most beautiful of all are such small-flowered sorts as *André Chenier* and *Etoile*. Beautiful also is the clear yellow *Sceptre d'Or*. These are of the greatest service, either for medium sized or large vases. Some of the new *Nancianus* section are extra fine for decorative uses. Some, however, are of a colour which, as a rule, do not find favour in the north country, but they are nevertheless very handsome. *Charles Baltet* is one of these, a curious mixture of slate and crimson; *Maurice de Vilmorin* is a slaty bluish violet. *President Carnot* and *M. Lefebvre* are perhaps the two finest from the general point of view, but for cut flowers I imagine none is so good as *De Candolle*, the flowers of which are open, narrow petalled, and loose, but of the best effect when cut. *P. Duchartre* is in the same way. We have had some fine arrangements with these alone, and with the *Lemoinei* varieties to brighten them with yellow tones. I should be inclined to advise those who do not succeed with the finer *Gandavensis* section to try both of *Lemoinei*'s types. Some of the *Nancianus* are of the strongest growth, and appear of as easy culture as the others.

A word as to setting up *Gladiolus*. The spikes should be cut early, say when three to four flowers are expanded. They are perhaps more effectively arranged by themselves than in any other manner. The foliage we employ is either *Iris germanica*, *Iris ruthenica*, the common Sedge, *Iris pseudo-acorus*, the common Rush, *Juncus triquetris*, or some strong grass.—N. B.

THE BRITISH FRUIT GROWERS' ASSOCIATION.

A SUCCESSFUL meeting of the above Association was held in the Crystal Palace, Sydenham, on Friday, September 5th, where there was a good attendance of fruit growers and amateurs interested in the subjects on the programme. G. T. Rait, Esq., Deputy Chairman of the Crystal Palace Company, took the chair at 3.30 P.M., and opened the proceedings with a brief but appropriate introductory speech. He referred to the fact that the British Fruit Growers' Association, which was doing so much good work, really originated at one of the Shows in the Crystal Palace, and he had much pleasure in extending a cordial welcome to the members this year. He complimented the Committee and the Hon. Secretary, Mr. Lewis Castle, upon the energy and judgment displayed in the management of the Association's business. He referred to his own experiences as a fruit cultivator, and in reviewing the programme for the day observed that Messrs. Castle and

Gordon's report with regard to their Irish tour would be the first one to be taken.

This paper (which follows) was followed by considerable discussion, in which Mr. W. H. (Bullock) Hall, Mr. Denny Lane of Cork, Mr. Albert Bath, and others, joined. The remaining papers were then taken in this order:—"Peaches and Nectarines," by Mr. T. Francis Rivers; "Plums for Market," by Mr. J. Smith of Mentmore, admirably read by Mr. J. Cheal in the unavoidable absence of the author; and "Cherries for Market," by Mr. G. Bunyard.

The Exhibition of Irish fruit, provided by members and friends of the Association in Ireland, comprised 150 dishes, chiefly Apples and Pears. The exhibitors were:—Lord O'Neill, Shanes Castle, Antrim (gardener, Mr. C. Warwick); the Rev. A. H. Pakenham, Langford Lodge, Crumlin (gardener, Mr. Harding); Sir Charles B. Barrington, Bart., Glenstal Castle, Murroe (gardener, Mr. Richard Weller); J. F. Lambard, Esq., Dublin; and J. F. Bannatyne, Esq., Summerville, Limerick (gardener, Mr. Elliott). Samples of the local varieties from old and neglected orchard trees were shown for comparison with fruits from well grown trees of good varieties, to indicate what could be effected by suitable attention.

FRUIT PRODUCTION IN IRELAND.

By Messrs. GEORGE GORDON and LEWIS CASTLE. Read by Mr. GORDON.

EARLY in the year it was decided by the Committee of the British Fruit Growers' Association to prepare a report on the present condition, and the possibilities of fruit culture in the United Kingdom, it being believed that a report, at once comprehensive and trustworthy, would have great practical value. In considering the form the report should take it is felt that as the climatic and economic conditions in Ireland differ widely from those which obtain in other parts of the United Kingdom, it would be necessary to devote special attention to that country. It was thought that whilst our local secretaries in Ireland would be able to render valuable assistance, it would be an immense advantage were some members of the executive to visit Ireland for inquiring into various matters of special importance, that the view presented of the condition and the possibilities of the fruit growing industry in that country might be as clear and exact as it is possible to make it. Eventually Mr. Castle, the Honorary Secretary, and myself, although well knowing the severe tax it would impose upon our time and strength, undertook the task, and we have now to inform you that it has been accomplished. We have also to give you a summary of our tour, and an indication of the impressions produced upon us in the course of the journey. This we shall do as briefly as possible, leaving details until the publication of the full report.

As many of you are aware, we devoted the greater part of the month of August to the work in hand, and I would mention, as a matter of some importance, that our inquiries extended from the counties of Antrim and Derry in the north to Cork, Kerry, and Waterford, which form the southern seaboard. In this tour, which involved travelling nearly 900 miles by rail and car, we saw much to deplore in the present condition of fruit culture, and not a little that filled us with hopefulness as to the possibilities of the industry. We met also with much kindness and great interest in the object we had in view, and an evident desire on the part of those with whom we came in contact to render all the assistance possible. Commencing our inquiries in Ulster, we soon found ourselves on farms that would bear a favourable comparison with the best holdings in England. We found also in this province that orchard planting had not been altogether neglected in the past, and that on many of the farms there were considerable breadths of Apple trees. On examining the orchards in Antrim and Armagh, we found that whilst the utmost care and skill had been brought to bear upon the Wheat, Oats, Flax, and other staple crops, it had been thought sufficient to simply plant the trees and leave the rest to Nature. When I tell you that the greater part of these orchards were planted from seventy to eighty years ago, and have since been practically left to themselves, you will readily understand that they give a very poor return. As a matter of fact, the majority consist of old worn-out trees, bearing plentiful crops of lichen and moss, with but little fruit, and that of the most inferior description. Not only are thousands of trees utterly exhausted, but a considerable proportion represent local varieties of the most inferior description, and therefore quite unfit for sending to markets in which the finer kinds make their appearance. We were repeatedly told by those who were old enough to remember the orchards when the trees were in a vigorous condition, that they had now ceased to bear satisfactorily because of a change in the climatic conditions, whereas the cause, as you so well know, is the exhaustion of the trees in consequence of old age and an impoverished condition of the soil. We saw but few signs of these old orchards being replaced by new ones. Here and there a few trees had been planted during the past few years; but instead of their having fresh ground they had

almost invariably been planted in the positions occupied by trees that had died out. As might have been expected, they had become a prey to mildew, lichens, and mosses, and presented a miserable starved appearance. Had we taken a superficial view of the case as presented to us in Antrim and Armagh, where Apple orchards occupy much space in proportion to their area, we should perhaps have regarded the production of first-class fruit in these counties as an impossibility. Knowing from practical experience and wide observation that the condition of the greater proportion of the orchards was due to old age and want of attention, we sought those which had a reputation in the several districts for the excellence of their fruit. We turned our attention also to gardens near at hand that were under the charge of men who had received a training in fruit culture. In the orchards that were in a fruitful condition we found the trees to be much below the average in age, and to have received some attention in the way of pruning and manuring. The gardens, however, afforded the best indications of the possibilities of fruit culture, not only in Ulster, but in the whole of Ireland.

Proceeding southwards we passed through a district on the boundaries of the counties of Meath and Dublin in which fruit growing is carried out on much the same lines as in the market gardens in the neighbourhood of London. In Ulster the whole of the orchards were in grass, but here the Apple and other standard fruit trees were planted at wide distances apart, and the intervening spaces filled with Gooseberries, Currants, and Raspberries. The whole of the standard trees were in a healthy state, showing that they received proper attention, but the crop was comparatively light, and as we were assured by those who were well acquainted with them much below the average. The various bush fruits presented the most satisfactory appearance, and had as usual borne heavy crops. It may here be stated that throughout the whole of Ireland, excepting of course in the mountainous districts, the whole of the bush fruits grow vigorously and bear heavily, the fruit being of the finest possible quality. No better crops of Currants and Gooseberries could possibly be desired than those we met with both in the north and south. For many years Gooseberries were rather largely imported, but they are now being planted somewhat extensively in one or two districts in Ulster, and they appear to be yielding satisfactory returns. The district between Drogheda and Gormanstown is not only remarkable as representing the most advanced stage of commercial fruit culture in Ireland, but it is distinguished by the general prosperity that prevails on all sides. In no other part of Ireland did we see the labouring classes so well dressed or having such comfortable well-kept houses as in the neighbourhood of Gormanstown, and it is fair to assume that the air of prosperity is chiefly due to the profitable character of fruit culture as there carried out.

South of Dublin the orchards on farms are comparatively few in number, and, as in the case of those in the north, they are chiefly furnished with old trees, more remarkable for the picturesque appearance of their lichen-laden branches than for their fruitfulness. But from the appearance of the orchards attached to the homesteads of some of the landed proprietors, and the condition of the trees in large gardens, it is evident that Apples of the finest quality might be profitably grown in many districts in the several counties between Dublin and Cork. In the Golden Vale there is ample evidence of the practicability of growing Apples of the finest quality, and here we met with an instance of the way in which suitable land might be increased by the judicious planting of fruit trees. On a large estate in which the rent of much of the land does not exceed 10s. per acre, there are several orchards that are let at a rent of about £3 per acre, which was not regarded by the tenants as in any way excessive. Here we found in full force the barbarous practice which obtains throughout Ireland of shaking the Apples from the tree, with the result that the greater proportion are bruised and rendered worthless for keeping beyond a few days. To gather the fruit by hand is considered a waste of time. We inquired of a young lady who was busily engaged in shaking down the fruit, how she secured the Apples that could not be shaken off, and she at once replied, "We knock them down with a long pole." In the valley of the Suir between Limerick Junction and Waterford, much of the soil and many of the situations are suitable for Apples. At one time cider of excellent quality was manufactured from Apples produced in this district, and the trees appear to have been allowed to die out. Whether the manufacture of cider was profitable or not we could not ascertain, but the fact that there were large breadths of free-bearing Apple trees is a proof that the district is on the whole well suited to their cultivation.

In speaking of the possibilities of fruit culture in Ireland, we are

anxious to be as guarded as possible in any expression of opinion. We should, however, fail in our duty were we not to state in the most emphatic manner that there is room, not only for improvement, but for an enormous development of the industry. There is no reason, apart from the apathy of the people, why Ireland should not only be independent of America and other countries for its supplies of Apples, but be in a position to export large quantities of that important fruit. We know that it receives immense quantities of American Apples during the winter and spring months, and in August we saw considerable quantities of Tasmanian Apples in the shops. There is evidently a good demand for Apples, and it is assuredly not a satisfactory state of things for the Irish people to import from countries some thousands of miles distant fruit that can be produced at home. The climate is admirably adapted to the growth of Apples, the heavy rainfall and the atmospheric humidity being favourable to the production of fruit large in size and clear in the skin. Cultivators not well acquainted with the conditions that obtain regard the atmospheric humidity as fatal to success. They, in fact, consider the ripening of the wood and the formation of the flower buds an impossibility with an annual rainfall of 40 inches. As the result of our observations and inquiries, I have to tell you that there is but little difficulty as to the maturation of the wood. On the shores of Lough Neagh, with an annual rainfall of about 35 inches, we saw in gardens and orchards under the charge of experienced cultivators heavy crops of all our best kinds of Apples. The fruit was not only plentiful, but of the largest size and finest quality. We were particularly struck with the crop of Stirling Castle, which was then being gathered for market, the price realised in Belfast being 16s. per cwt. The finest of our dessert and kitchen Apples were also met with in the most productive condition some ten miles south of Cork, where the annual rainfall averages 45 inches. In a fruit garden in the last named county Pears were bearing not less satisfactorily in the open quarters than were the Apples, the fruit of many of the varieties being equal to the finest samples received from the Channel Islands. Pears, Plums, and Cherries have so small a space in orchards, and are so generally grown against walls in gardens, that the extent to which they can be successfully cultivated in the open cannot at present be satisfactorily determined. It is a question well worthy of the attention of those who have opportunities for experimental culture. The probability is that they might in many districts be grown with considerable success. Inquiring of one cultivator whether he had many Damson trees, he said No; he had only two, and these usually produced about 3 cwt. of fruit each. The excessive moisture of the atmosphere is highly favourable to the growth of both mosses and lichens, more particularly the latter. They quickly attach themselves to the fruit trees, and when allowed to remain undisturbed they soon cover the whole of the branches and impose a check upon the growth, but evidently not so severe as might be imagined. To keep the tree free from both lichens and mosses is by no means difficult. We had a striking proof of this in a garden near one of the great cities belonging to a merchant, who devotes much attention to fruit culture. The garden contains comparatively large collections of Apples and Pears. The trees were all bearing heavy crops, and the fruit was so finely developed that it was not surprising to find the proprietor regarding fruit of Warner's King, weighing 1 lb. each, as by no means exceptional. The point, however, that we wish to bring out is the fact that there were no traces of either moss or lichen on the trees, and the immunity from these plagues was due to the trees being annually painted with a mixture of which clay, lime, and petroleum form parts. The cost is practically nothing, and the trees were equal to any that could be found in Kent.

To effect a general improvement in the condition of fruit culture in Ireland will be slow work, but with well directed efforts we have no doubt as to the ultimate success. We must first endeavour to create an interest among the owners of land, whether they be private individuals or corporate bodies such as the great City companies. Probably one of the best means for doing this will be to show, as in our report we shall be able to do, that many of the districts are well adapted to fruit culture, and that by judicious planting and management the value of the land may be greatly enhanced. What is especially wanted is the planting of experimental orchards on large estates in various parts of the kingdom. These are required for the purpose of testing the relative merits of varieties for the respective districts, and training young men in the management of orchards and the marketing of the fruit. The cost of planting from 10 to 20 acres with fruit trees would not be great, and whilst giving a good return annually the plantation would form a practical school of immense value. The conditions under which farms are now held are favourable to the planting of fruit trees, but

in the present state of their knowledge it is hopeless to expect tenant farmers to plant largely. Nor perhaps is it desirable they should do so until they have had opportunities for acquiring sufficient knowledge to engage in the work with the full assurance of success. Knowing how fruit culture may be made to increase the wealth of many districts, we are naturally anxious that there should be as few mistakes as possible. It would also be an enormous advantage if, in conjunction with these experimental plantations, the bottling and preserving of the soft fruits were carried on exactly as in the case of Lord Sudeley's fruit farm at Toddington, as it is essential that the utilisation, as well as the production of fruit, should receive a full share of attention. In the meantime much might be done to show that existing orchards may be greatly increased in value by judicious thinning of trees, by regrafting worthless kinds still vigorous with the finest sorts, by manuring trees that are in an exhausted condition, and by keeping the wood free from lichen and moss by application of limewash or other suitable dressing.

It is not only desirable that there should be an extension and improvement in the culture of fruit for market, but the fruit trees should be planted more extensively on small farms and in cottage gardens for home supply. At the present time this phase of fruit culture receives but scant attention. Mr. Bullock Hall, one of our Vice-Presidents, has for several years past been doing much to promote the planting of fruit trees in Ireland, and has generously distributed large numbers amongst various classes of the community in the south. He is still engaged in the good work with such modification as experience has suggested, and it was gratifying to hear how greatly the majority of those who had received trees appreciated them. In a recent letter he complained that but little interest had been taken in the matter by the parish priests, and we refer to that point for the purpose of saying that with their influence they might do much to promote the profitable culture of fruit in gardens and small holdings, and thus render valuable service in the cause of the health and welfare of a large body of the community.

PEACHES AND NECTARINES.

By Mr. T. F. RIVERS.

THE continually increasing imports of Peaches of not very good quality point to the fact that a demand exists. Although the Peaches on the street barrows are at present very inferior, if a profitable sale can be made the quality of the fruit will soon be improved, and the continental Peach orchards from which the supply is drawn will be planted with sorts that will command a ready sale and probably a higher price. In America the sale of Peaches is enormous, and thousands of acres are planted for the supply of this demand. The distance from their markets being as great as the available districts of France are from us, we may look forward some day (if a favourable soil and climate can be found) to the supply of the English markets by foreign growers. It will be for English growers to consider whether it is possible to compete successfully with the out-of-door Peach orchards, and to create a demand by the production of fruit which will tempt buyers to give a sufficient price to pay the producer.

It is absurd to suppose that in England wall culture without glass can ever be employed with profit for Peach growing, but a reasonable profit may, I think, be derived from cultivation under glass. Span-roof houses may be erected at a moderate cost. By planting half-standard trees with untrained heads the great expense of training will be avoided, and if the trees are not overcropped an annual and certain return may be expected in unheated houses from July to October. If glass cannot compete with foreign orchard Peaches in the supply of the streets, they can at all events supply the shops. During the last thirty years many varieties have appeared in England which have altered the conditions of Peach growing. Many gardeners can recollect that July Peaches, as a rule, were small and very inferior, this precocity being their only merit. In place of these small and worthless sorts we have large and good fruits, the earliest being the Alexander, which I received from Messrs. Capps & Son of Fort Pulaski, Illinois, U.S.A., about 1874. This is a large bright coloured fruit of excellent quality, freestone, and firm enough to bear carriage well. At the same time Messrs. Capps sent me the Amsden June Peach, quite as early, but not so good in quality. This Peach, however, appears to have improved since its introduction, as it seems to be popular with some. I have, however, invariably found it to be a clingstone and bitter. The Waterloo is another American Peach of good quality, ripening in my orchard house about a week after the Alexander. This is also a large bright Peach. After the Waterloo there is a series of July Peaches: the Early Beatrice, small, but a most abundant bearer; the Early Louise,

Early Rivers, Hale's Early, Early Leopold, all ripen in July in an unheated orchard house. In August the succession is continued by Rivers' Early York, a very valuable market Peach, the Early Grosse Mignonne, the large Early Mignonne, the Condor, Dr. Hogg, Crimson Galande, and Early Alfred. In September Peaches are numerous enough, and the best sorts are well known, the principal varieties being the Grosse Mignonne, Galande, Goshawk, Alexandra Noblesse, Noblesse, Royal George, English Galande, Stirling Castle, Dymond, Barrington, Princess of Wales, Neectarine, Late Admirable, Walburton Admirable, and Gladstone. Lady Palmerston and Golden Eagle are late yellow Peaches of excellent flavour. In October we have the Desse Tardive and Catherine, and in November the Salway and Comet. This seems a long list of Peaches, but I assume that Peach growing will be eventually entirely carried on under glass, and instead of the cumbrous trellis, trees will be grown in their natural form—that is, either as half-standards or bushes; and more varieties can, of course, be planted even in the area of a glass house than on trellises.

Of late years a very considerable advance has been made in the varieties of Nectarines. Before the Stanwick Nectarine was introduced into England the available sorts were very limited both in season and quality. The small and worthless Fairchild's Early was the earliest, ripening about the second week in August. We have now the Advance Neectarine in July, and in August and September a series of large and fine Neectarines very much superior in size and flavour to the older varieties. These are Lord Napier, Improved Downton, Spenser, Stanwick Elruge, Newton, Milton, Goldoni, Rivers' Orange, Humboldt, Pine Apple, and Victoria. These Nectarines will supply fruit from August to October, and there is a steadily increasing demand, consequent, I imagine, on the discovery that Nectarines of the present day are much better than those formerly offered for sale. This improvement is due in a great measure to the mixture of the Stanwick Neectarine race with the old sorts. There are two very distinct types of Nectarines, the orange fleshed and the green fleshed, the former being the more popular from its peculiar richness of flavour, especially when allowed to shrivel.

In my opinion a profitable business may be made by the cultivation of Nectarines alone, but no large profit can be expected from either Peaches or Neectarines grown on walls, or by the very expensive trellis training. Trees trained to walls are cultivated under conditions which can hardly succeed for any length of time. It cannot be conducive to the health or well being of a tree to place one side in perpetual shade during the summer when its best energies are required, this is done when the tree is placed against a wall, and when portions of the bark on all the branches are prevented from enjoying the healthy action of the sun by fastening with woollen shreds. Trees trained to trellises under glass are not, of course, grown under the same vicious conditions, but the system is expensive and the training tedious, and also requires to be managed by skilful practitioners.

The dwarf standard, either planted out or grown in pots, is the most profitable form. Span-roof 18 feet wide will take three rows of trees, and all the pruning and training can be managed with the budding knife and the finger and thumb. With an abundant supply of water and a calcareous soil I believe that a fair profit can be made even by cultivators who have not been specially educated for the business, but who have their wits about them and a good faculty for observation. I should not recommend lofty houses. Every tree should be grown at a height which the cultivator can reach, as during the time when the Peach is starting in growth it seems to be singularly liable to the attacks of those intolerable nuisances red spider and aphis, which will certainly prevent success if not destroyed as soon as observed, on low trees they are sooner found out, and when once a vigorous and healthy growth is established there is no danger to be feared. Abundant ventilation and sunlight are two of the primary elements to bring about this desirable result.

PLUMS FOR MARKET.

By Mr. J. SMITH, of Mentmore, Bucks.

IN the few practical remarks that I am about to make it is not at all necessary for me to decide from what part of globe we first obtained our cultivated Plums, whether from America, Asia Minor, or if they were found wild in Europe; this can be best determined by our botanical friends. I consider the Plum next in importance to the Apple in a commercial point of view. In years of plenty they can be dried, in which state they will keep good for years. They can also be made into jam, which will keep for a considerable time.

In growing for market one of the first questions asked is, What varieties would you recommend? Now, this is a very important point,

for when you go into a nursery to purchase trees you will find, as a rule, all varieties are charged the same price, except it be some new and untried variety, which may be charged a fancy price for a year or two. It is a well-known fact to fruit growers that in certain localities and on certain soils one variety will flourish and bear abundant crops year by year, while other varieties will never grow enough fruit to pay for the first outlay. I may just give one well-known instance to impress on growers the importance of this being well understood before recommending certain varieties for any given district or soil. At Sawbridgeworth Messrs. Rivers have, as a rule, splendid crops of Rivers' Prolific Plum; in fact that variety seems perfectly at home in the stoney clay of that district. Here, in a chalky clay which suits many varieties admirably, Rivers' Prolific grows freely, but seldom bears any fruit, although, as a rule, the trees flower freely. The question of selecting suitable varieties for any given district can only be learned by practical experience and observation. Growers of the Plum are aware that the number of varieties of the cultivated Plum is almost legion. I have just gone through one catalogue before me, and find no less than 237 varieties described, with a supplemental list of some 180 more, or in all, say, about 400 varieties. Now, this would plant about 4 acres of ground of one plant or tree of each variety. But would any grower who had any idea of making a profit be foolish enough to plant these, or even half this number? It would be a far more profitable investment to plant only one variety on the 4 acres, but this I should by no means recommend. My idea of Plums for market is to find out five or six varieties that are known to succeed in the district, and plant only these.

I have already remarked that certain varieties favour certain districts. Here the soil is a strong chalky clay, and the following varieties are grown by hundreds, and in the case of the Damson by the thousand:—Green Gage, Jeffersons, Mitchelsons, Gisbornes, Victorias, and Damsons. Victorias and Damsons are most grown.

This might well be termed the "Home of the Damson," for many acres are planted, and during the fruit season from twenty-five to thirty tons per week of these are sent away from our railway station. The Damsons here sell for more money than any other variety grown. In seasons of plenty they have been sold as low as £3 per ton, and other years they have made from £35 to £40 per ton.

The plan adopted is to plant on grass land at a distance of 22 feet apart each way. This will give about 105 trees per acre. Nothing but standards should be planted, and they should always have a clear stem of 6 feet. Before deciding to plant a field, the ground selected should be thoroughly drained, as stagnant water about the roots would soon prove fatal to the trees. In planting young trees a small portion of rotten manure may be mixed with the soil if the ground is poor, but I never make a point of recommending much manure to be placed in immediate contact with the roots while the trees are in a young state. I consider it better to merely mulch the trees with rotten manure after they become established. In planting the trees should be kept slightly above the ground level, as they are sure to settle down, although the ground is made firm, which I should strongly recommend. Immediately the trees are planted they should be securely staked, and the heads cut close back, only leaving two or three eyes on the young growths. Established trees should be gone over every year, and a certain portion of the small shoots removed, so as to keep the centres of the trees clear and open for the sun and air to reach every part of the trees. In many districts where the Plum flourishes I am aware that they are grown much closer, and many growers prefer bush trees, but of this style of growing I have had no practical experience, and shall pass it over for someone who has had experience to take this part of the subject up. In the orchards here sheep, calves, and poultry are kept to the mutual benefit of all.

It sometimes happens that some of the young trees will in a few years become "stunted" and hardly make any growth, more especially Damsons. My plan with such trees is to cut them hard back, almost to the stem; by this means they often start away and make vigorous growth. If the ground is at all poor it is a good plan before cutting them back to lightly break up the surface all round the trees, say 6 or 7 feet all round, and on this ground spread three or four barrowfuls of good manure. If this is done early in the autumn, so that the rains can wash the properties of the manure to the roots, the trees will start away with fresh vigour, and form fine healthy shoots the first season. I consider the Damson the most profitable for field cultivation. Next to it comes the Victoria Plum. Many acres of Damsons are grown here, and from experience I find the Farleigh, or Cluster Damson, is the hardiest of all; it will be found fresh and good when other varieties of the Damson are completely spoiled by frost. The Prune Damson as grown here is

very late and hardy ; the tree is of a spreading habit of growth, and the leaves are larger than any other variety I know.

I shall conclude with a few remarks as to the marketing of Plums ; next to growing them this is of the most importance to the gardener. How to make the best of them is the question ? I have known growers who have taken great pains to pack as much straw as possible in the bottom of the sieves, so that they may have more bulk for market ; this, I can assure growers, is a mistake. It is also a mistake to select the very best samples for the top of the baskets. I have been sending Plums to market by the ton for the last fifteen years, and my plan is to pack the bulk of one uniform quality throughout, and where this is done the buyers soon get to know and purchase accordingly.

CENTROPOGON LUCYANUS.

THIS is an evergreen plant with pale green rather large leaves, and terminal heads of bright red, long tube-like flowers. It is of moderate growth, attaining a height of about 2 feet ; but small plants may be flowered at a height of from 9 to 15 inches.

Cuttings of the young shoots may be inserted at any time, and in a gentle heat they root freely. I usually insert the cuttings as soon as shoots 3 or 4 inches in length can be had. They are cut below the lowest joint, the leaves removed 2 inches up the cutting, and then inserted singly in pots 2½ inches in diameter, using a compost of two parts fibrous loam, one part leaf soil, and one part sandy peat, with a free admixture of silver sand. In putting in the cuttings make a hole in the centre of the pot, drop in some silver sand, and fill up round the cutting with the same material ; then water gently, and place the pots in a close frame with a temperature of 70° to 75° at night, keeping close, shaded, and moist until the cuttings begin to grow ; afterwards admit air, and gradually harden them off. They will root all the more freely if they have a bottom heat of 75°.

When the roots are matting the sides of the pots shift the plants into 4½-inch pots, using the same kind of compost as before, and place them in a house with a temperature of from 65° to 70° at night, having a moist well-ventilated atmosphere. The shelf of a stove so situated that the plants may be 15 inches from the glass will answer well. They will need to be encouraged by a gentle sprinkling overhead two or three times a day, and moderate watering at first, increasing the supply as the pots become full of roots ; but when the plant has taken to the fresh soil after having been potted, the shoot ought to be cut back to within three or four joints of the surface of the soil, which will render watering less necessary for a time, and yet the moisture must be sufficient for free growth. By August the plants should be in their largest pots, which for this class of plants may be 7 inches in diameter. The drainage should be good, but need not be excessive, and the plants must have a moist atmosphere and due supplies of water to keep them in a free state of growth. This treatment should be continued until they have made a good growth, and as it will be of no use for flowering unless it is strong, stiff, and short-jointed, they must be kept close to the glass and well attended to in point of ventilation.

No training is required, for by turning the plants round frequently and exposing opposite sides to the light, they will grow evenly. Irregular growth, however, may need some regulation, which should be seen to in time ; a peg at first may give the required direction to a shoot, which, if allowed to grow unassisted, might require a stake to bring it to the position desired.

After October the plants should have the lightest and most airy position in the stove, and the watering should be no more than is sufficient to keep the foliage fresh. This will cause the wood to ripen, and the terminal head or point of the shoot to set for flower. When the plants show signs of flowering water more freely, but avoid making the soil sodden, or syringing much overhead. Though sprinkling overhead once or twice a-day does good, yet when it is heavy, and the leaves remain long wet, they become spotted and fall. The plant usually flowers in January, and continues until April. The heads of bloom are excellent for cutting, and though it is not so attractive a plant as many, it is nevertheless useful for decorative purposes, and deserves extended culture.

Centropogon Lucyanus is a stove plant, but may be grown in a house having a winter night temperature of 50° to 55°. The main point is to secure good growth in summer by giving plenty of heat and moisture, and in winter it endures dryness and coolness, and flowers all the better under these conditions.

Should plants in small pots be wanted, the points of the strong-growing shoots may be taken off in July, inserted in small pots, and struck in heat, shifting them in August into 4-inch pots, and keeping them on shelves near the glass. Thus treated they will flower on stems from 6 to 9 inches high, and are very pretty.

The old plants need only have the worn out and weak wood cut out in April, and after they have pushed fresh shoots a few inches long, they should be shaken out and repotted, keeping them close, moist, and shaded for a few days until established. Shift them into their largest pots at the end of July. A well-grown large plant is very handsome at midwinter, and invaluable where cut flowers are in demand, as it will in no way be impaired by the removal of the bloom, for all the blooming shoots need to be cut back.—G. A.

INSECTS OF THE FLOWER GARDEN.

(Continued from page 68.)

A NOTORIOUSLY destructive group of insects is that we call the straight-winged order, or the Orthoptera, insects wonderfully agile, sometimes musical, sometimes strange in form and mysterious in habit, but which, happily for us, do not much infest our English gardens. One member of the tribe, the migratory locust—a chance visitor here—is not only terribly injurious in Asia and Africa, but comes as near to us as the Continent, where flowers, vegetables, and fruit are often swept away by their ravenous hordes. These insects pass through a pupal stage, but they are as active in that as in the larval and winged stages, and though the wing-cases are soft, the jaws are like those of the beetles, and powerful. This fact may be easily ascertained by anybody who has a chance of laying hold of the great green grasshopper, which is a haunter of hedges, and occasionally leaves these to take an excursion in any flower garden that may be near. If seized, it can bite sharply enough to cause pain, but as entomologists think this grasshopper is partly carnivorous in habit, it need not be expelled, possibly it feeds upon aphides and similar “small fry.”

The grasshoppers, locusts, and crickets belong to that division of these insects known as the “jumpers,” the other divisions are the “walkers” and the runners. Some have expressed surprise to me that the common house cricket, fond as it is of warmth and moisture, is not frequently found resident in stoves and forcing houses ; the species does indeed occur sometimes, but it is unusual, so far as I have observed. The preference these insects show for bakehouses and kitchens indicates that such places yield them not only shelter but food, and the latter they may not be able to get in our houses. Though some years ago it was agreed, from the quarrelsome character crickets exhibit, that they must be carnivorous naturally, it seems now ascertained their food is of a vegetable kind. Perhaps it is quite as well that our gardeners have comparative freedom from the monotonous “song” of this species, which is to many persons a very worrying sound, and according to old authorities on the subject of insect-killing, to slaughter crickets is a sure way to bring ill-luck upon oneself. The common species of field cricket now and then quits the fields, and disports itself amongst our shrubs, or leaps over our lawns ; however, it does neither good nor harm. Erasmus Darwin credited it with the power of foretelling a change of weather, for he states that the chirp is sharper before approaching rain, the damping acting upon the insect’s drum or sounding board.

In some of the midland counties, and in the west of England, the mole cricket (*Gryllotalpa vulgaris*), also called the churr worm, or croaker, by some rustics, from the sound it makes, is noticed some years to be the cause of mischief in flower gardens or amongst vegetables ; in other seasons it confines its operations to banks and fields. It is a remarkably muscular insect, and there is a peculiar development of the forelegs, suggesting a comparison to the limbs of the mole, as there is a broad and flattened digger armed with claws. Aided by this the mole cricket makes long runs or tunnels, gnawing the roots of plants, and, like its namesake, often betraying the course it has taken by a ridge of earth raised over the track. There must be some natural check upon the increase of mole crickets, for the females deposit a large number of eggs, about 300 Rosel reckoned, and like their parents their life is subterranean, but they cease to eat during very cold weather. It has been found that the adults cannot turn round in their burrows, but they are able to move backwards as well as forwards. At night they fly out to start new colonies, moving rather oddly by a succession of jerks. I am afraid there is not much advantage in trying to kill mole crickets by applying poisonous compounds to the soil, and the best way of dealing with them is to catch the adults at the egg-laying season when they are taking their excursions.

A household insect of this order, too, unpleasantly common in town and country, is the cockroach (*Blatta orientalis*), also called blackbeetle incorrectly. I have already noted the fact in these pages that this repulsive insect sometimes quits the domestic regions, which are its headquarters, and goes out of doors for a change, generally preferring the autumn. I have seen them along flower beds where they cannot do much harm, but if a greenhouse

is accessible they will enter that and gnaw the stems of young plants. Owing to the nocturnal habits of the species they may escape detection, concealing themselves in nooks and corners till they return to the kitchen or laundry. This insect is not truly British, but a native of the Levant, and far surpasses in size our own species of the same tribe. I have received specimens of one of these taken in some border, sent on the supposition that it had been doing mischief. It bears the name of *B. germanica*, given to it, probably, because it is so abundant in many parts of Prussia, also in Russia. This is of a pale brown colour, about half an inch long, and, like its larger relative, fond of keeping out of view by day. From its being usually observed amongst heaps of dead or decaying leaves I should consider it is an insect almost harmless.

Where there are ponds near flower gardens dragon flies are likely to be seen during the summer and autumn flying over the flowers, intent upon capturing some of the numerous insects that are attracted to the plants. Mostly it is only the dragon flies of size and strength that occur in gardens; the small and more delicately formed "demoiselles" of brilliant colours, with other species akin to them, are only now and then found on the wing at any distance from the stream or pond in which their larval life has been spent. It is to the larger species, those we usually see about gardens, that the popular name of "horsestinger" belongs, certainly inappropriate, as they make no attacks upon horses or animals; nor can they sting at all, though the tail in some of them has a curious appendage that might pass for a sting. These flies, indeed, seldom try to bite the hand if they are grasped, and, like the rest of the species in the order Neuroptera, or the net-winged insects, they are either serviceable to man or not injurious to plants he cultivates. It is a pretty sight to see one of these "dragons of the air," as they may well be called, careering above our garden paths and beds, both wings and body glittering in the sunshine. They possess the power owned by no other winged insect, of flying backwards, forwards, and sideways without turning; this enables them to chase their prey rapidly whenever it happens to double. Of course, among the insects they capture there are some that are harmless, butterflies for instance, but they kill many that are mischievous; thus a dragon fly will tackle a wasp bravely enough, and it now and then happens that in the conflict the dragon fly is worsted. A much smaller, very pretty, and decidedly useful insect of this order, which we may often see crawling on herbaceous plants and on Pelargoniums, is the lace-winged fly (*Chrysopa vulgaris*), and whenever one of these is observed displaying its thin greenish-pink wings and eyes of gold, it should be left unmolested. If a female insect, it is probably engaged in the work of depositing eggs upon the leaves; these eggs are placed upon footstalks some lines in length, and would not at first be taken for the eggs of any insect. The larva of this fly devours enormous quantities of aphides, yet it is supposed to have no eyes, therefore it must hunt them by the sense of touch, and it is remarkably agile in its movements.—ENTOMOLOGIST.

ROYAL HORTICULTURAL SOCIETY.

SEPTEMBER 9TH.

THE exhibits were not numerous at this meeting, but comprised fine representative collections of Dahlias, Gladioli, trees, and shrubs. In the afternoon the paper by M. Lemoine on Gladioli attracted a good audience.

FRUIT COMMITTEE.—Present: John Lee, Esq., in the chair, and Messrs. F. Jamin, R. D. Blackmore, P. Crowley, Harrison Weir, A. H. Pearson, G. Bunyard, J. Smith, G. Norman, J. Hudson, F. Q. Lane, A. Watkins, and J. Cheal.

Messrs. J. Carter & Co., Holborn, sent fruits of Market Favourite Tomato and large Melon named Holborn Favourite. Mr. R. Maher, Yattendon Court, Newbury, sent samples of two seedling Grapes from Black Alicante crossed with Black Hamburg, and the "Early White Hamburg" from the Red Sweetwater. The Committee desired to see the former again; the latter was passed without comment. The Rev. W. Wilks, Shirley, Croydon, sent two fruits of a Pear named Marguerite Marrellat, thought to resemble Souvenir du Congrès. Mr. A. Selby, Radcliffe-on-Trent, showed seven dishes of fine Potatoes. (Cultural commendation.)

Mr. J. Walker, Ham, exhibited twenty-three dishes of Apples, comprising good examples of Lord Grosvenor, New Hawthornden, Grenadier, Lord Suffield, Stirling Castle, Lane's Prince Albert, and others (silver Banksian medal). Mr. T. H. Crisp showed a collection of fruits—Apples, Pears, Figs, Peaches, and Nectarines, all good specimens (cultural commendation). Messrs. Paul & Son, Cheshunt, showed ten varieties of Nuts, Red and White Filberts, Cut-leaved Nut, Pearson's Prolific, Kentish Cobs, Princess Royal, Purple-leaved Filberts, Frizzled Nuts, Cosford, and Merveille de Bollwyller. (Vote of thanks.)

Melon Ely's Seedling (Mr. Ely, Joyce Grove, Henley-on-Thames).—A green-flesh Melon of good flavour, the flesh deep, and the skin well netted.

FLORAL COMMITTEE.—Present: W. Marshall, Esq., in the chair;

and Messrs. R. Dean, H. B. May, H. Cannell, C. T. Druery, Shirley Hibberd, F. Moore, G. Paul, J. Fraser, C. Noble, W. Holmes, J. Walker, J. O'Brien, Lewis Castle, Dr. M. T. Masters, and Rev. H. H. D'Ombraim.

Messrs. H. Cannell & Sons, Swanley, had a most attractive group of Cactus Dahlias, amongst which the following varieties were noteworthy:—*Lacineata aurea*, bright yellow; Lewis Castle, rich bluish purple; Empress of India, deep maroon; Dr. Peters, orange red; Cannell's Favourite, deep orange; and Maid of Kent, maroon-tipped white, for most of which awards of merit were adjudged.

Messrs. Kelway & Son, Langport, had a wonderful collection of Gladioli spikes. (Silver-gilt medal.)

MM. V. Lemoine et fils, Nancy, contributed an interesting collec-



FIG. 28.—HABENARIA MILITARIS.

tion of Gladioli of the Lemoinei and Nancianus types (silver Banksian medal), Gladiolus Nancianus Le Grand Carnot (M. V. Lemoine et fils). spike long, flowers large for the type, salmon red, creamy white in the centre. (Award of merit.)

Messrs. Paul & Son, Cheshunt, had an exceedingly interesting and extensive collection of specimens of finely variegated and ornamental trees and shrubs (silver Banksian medal.) Specimens of Acer Van Volxemi were shown by Dr. Masters to illustrate the rapid growth of the tree at Ealing. (Vote of thanks.)

Mr. T. H. Crisp, Canford Manor Gardens, Wimborne, secured the medal offered by Messrs. Kelway & Son for twelve varieties of Gladioli with well-developed spikes and flowers.

ORCHID COMMITTEE.—Present: Harry J. Veitch, Esq., in the chair, and Messrs. J. O'Brien, S. Courtauld, Lewis Castle, F. Sander, J. Douglas, E. Hill, J. Dominy, C. P. Pilcher, and Dr. M. T. Masters.

Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking (gardener, Mr. W. White), exhibited seven remarkably well-grown plants of *Habenaria militaris* bearing large heads of its peculiar bright red flowers. See fig. 28. (Silver Banksian medal.) A plant of *Cypripedium glanduliferum* was sent that was considered to be identical with *C. præstans*.

Messrs. F. Sander & Co., St. Albans, sent several interesting Orchids, comprising grand specimens of *Miltonia candida superba*, having eight long racemes of richly coloured flowers (cultural commendation). T. A. Gledstanes, Esq., Gunnersbury (gardener, Mr. H. Denison), was awarded a cultural commendation for a strong plant of *Dendrobium formosum*, with twenty fine flowers. A plant of *Vanda Sanderiana* was also sent, with a raceme of nine flowers. T. Statter, Esq., showed several plants, for which awards were granted. A large plant of *Dendrobium album*, having four long flowering growths, received a cultural commendation.

PLANTS CERTIFICATED.

Cattleya aurea Statteriana (T. Statter, Esq., Stand Hall, Whitefield, Manchester; gardener, Mr. R. Johnson).—A handsome variety, the sepals and petals yellow, the lip rich gold, edged light crimson, and veined with deep crimson in the centre. (First-class certificate.)

Lælia elegans Turneri, *Stand variety* (T. Statter, Esq.).—A fine variety, distinguished by the size of the broad, rounded, rich purplish crimson lip.

Crocasma aurea var. maculata (Mr. J. O'Brien).—Bright orange flowers with a deep crimson blotch in the centre of the three inner divisions.

Godetia Duke of Fife (Messrs. Daniels Bros., Norwich).—Flowers deep crimson with a silvery centre.

Dahlia Lorina (C. Turner).—A Show variety, orange bulb, fine bloom.

Rubens (C. Turner).—A Pompon variety, crimson tipped white, neat.

Marion (C. Turner).—A neat Pompon of a soft rosy tint.

Gladiolus Leonard Kelway (Kelway & Son).—A distinct velvety crimson, faintly edged purple.

Gladiolus Lemoinei Mié Blanc (M. V. Lemoine et fils).—Very distinct; the flowers small, of a distinct bluish purple shade.

Gladiolus Lemoinei E. V. Hallock (M. V. Lemoine et fils).—Flowers neat in form, creamy white, two inner small petals reddish crimson at the base tipped with golden.

Dahlia Black Prince (Mr. J. Green, Dereham).—One of the "Cactus" type, of an exceedingly dark maroon colour.

Dahlia Crimson Beauty (Mr. T. S. Ware).—A very neat Pompon variety, dark velvety scarlet, florets flat.

Dianthus caryophyllus Margaritæ (James Veitch & Sons, Chelsea).—An attractive strain, with red, rose, orange, salmon, and white flowers (award of merit). It was stated that "the seed was sown early in March in a warm frame; the seedlings were transplanted in a cold frame as soon as large enough to be removed, and they were planted out of doors early in June. The plants were lifted from the open ground."



EVENTS OF THE WEEK.—To-day (Thursday) the National Chrysanthemum Society's early Show is continued at the Royal Aquarium, Westminster, also the Brighton Horticultural Society's Show in the Royal Pavilion. In connection with the last-named, the British Fruit Growers' Association hold a conference at 4 P.M. in the King's Room, the Mayor of Brighton in the chair. On Friday, September 12th, and Saturday, September 13th, the Royal Botanical Society at Manchester will hold a large fruit Show in the gardens at Old Trafford. The annual Exhibition of the Galashiels Society also takes place on September 13th.

— THE WEATHER in the METROPOLITAN DISTRICT has been exceedingly fine during the past week, bright, warm, sunny days being followed by clear nights. The day temperatures have on several occasions risen very high, Monday and Tuesday being especially hot; but at night there has been a corresponding fall, with slight frosts in some low situations.

— MANY will learn with regret that Mr. JAMES BACKHOUSE died at West Bank, York, on August 31st, aged sixty-five years. Mr Backhouse was the head of the firm of Messrs. Backhouse & Son of York, and had from his earliest years devoted himself to the study of plants. Ferns were great favourites, and his beautiful fernery and wonderful collection of Filmy Ferns had many admirers. Under his management also large collections of Orchids and hardy plants were formed in the York nurseries.

— WE are informed that the B. S. WILLIAMS MEMORIAL is making fair progress, and the list of the Committee has been consider-

ably enlarged. In the list recently published the name of Mr. Henry Cannell of Swanley should have appeared, as he was one of the members appointed at the meeting of August 12th. The omission was the result of an error in copying. Mr. Cannell has subscribed 5 guineas.

— GARDENING APPOINTMENT.—Mr. Albert E. Sutton has succeeded Mr. R. Burn as gardener at Naworth Castle, Brampton, Cumberland.

— MR. W. BARDNEY writes:—"On the morning of the 30th ult. we experienced what may be termed our FIRST FROST. There had been every sign of frost for some days previously, for the grass early each morning was white. On Saturday it was hard and stiff. This was followed by a sharper frost on September 1st. Not a mile from the garden, on the slope of a hill facing north, there was ice the thickness of a penny. The gardens are sheltered, and lay to the south. Fortunately we escaped without injury, but tidings reach me of the destruction of French and Scarlet Runner Beans only a few miles away."

— THE same correspondent remarks:—"POTATOES are very badly diseased. In several cases more than half the crop is affected, and large quantities have decayed since they were housed. So far Empire State has resisted the disease more than any other variety. The tubers are large—too large—many of them for table use, but the crop was abundant. Beauty of Hebron has perhaps suffered more from the disease than any other variety."

— YOUR correspondent, Mr. John Williams, asks for further information respecting TRUFFLES. At one time they were very common on this estate, and several trained dogs were kept for the purpose of finding this fungus. This was done in the following manner:—The head gamekeeper had charge of these dogs, and when he received orders for Truffles, these dogs were taken to the most likely parts of the woods or plantations. Truffles have a peculiar smell, which attract the dogs, and when they come upon them they immediately commence to scratch. The Truffles were then dug up, and for each Truffle the dog which found it received a biscuit; and sufficient Truffles were found in a morning search for the requirements of dinner in the evening. Of course all this is a thing of the past. No dogs have been kept for many years, but no doubt the Truffles grow the same; indeed I have found them many times under Beech trees, and I think I could soon secure some again if I made a search. I have never seen one approaching that figured in your last issue. The largest I ever saw was not larger than a Walnut. Those found in this neighbourhood are not unlike a Walnut in shape; dark brown in colour, with warts all over them, which are almost black. The flesh is of greyish colour, and, as you say, veined with blackish marks; and the smell they give off is certainly not unpleasant. If they are such a luxury why is not their cultivation taken up? Or are they too long in coming to maturity? One thing is evident, I shall not be the first to make the attempt.—T. ARNOLD, Cirencester.

— MR. YOUNG also writes, "It may interest Mr. Williams to know that Truffles are fairly plentiful in some parts of Herefordshire. Whilst living at Holme Lacy we found numbers under Laurel bushes."

— RUNNER BEAN NE PLUS ULTRA.—In common with many other gardeners we have given the above Runner Bean a trial, and must say that it is a decided improvement. The pods hang in bunches, are long and handsome in appearance. The quality is good.—A. YOUNG.

— LILIUM LONGIFLORUM.—I send you a photograph of a group of *Lilium longiflorum* grown in a corner of my garden at Croydon. I planted twenty-four bulbs bought late last autumn—about November—and they have turned out splendidly, the stems being about 3½ feet high, and throwing in most cases three to five flowers, I think in one case only two flowers, the flowers being fully 9 inches long, and perfect, not a single case of splitting, which I have found to be rather a common failing of *L. longiflorum*. In this clump there were about sixty flowers open at one time, and they had a very fine appearance, the photograph not doing justice to the reality. I bought and planted at the same time ten *L. auratum virginale*, twenty *L. a. platyphyllum*, and ten *L. lancifolium Melpomene*. They are all doing very well, as have most of my Lilies this year, the sole exception being *candidum*, of which having a large number I am getting rather despondent. I have tried various remedies for the disease so prevalent. New loam and replanting seem, so far, to have had no effect. The bulbs seem quite

healthy when lifted. — CHARLES T. GRAHAME. [The photograph represents a border of vigorous well-flowered plants of *L. longiflorum*, a beautiful feature in any garden.]

— THE best crop of fruit that has this season come under my notice is at THE GRANGE, CO. LIMERICK, the residence of Captain Croker. Strawberries and all other small fruits have carried enormous crops. The Plums and Pears on walls would surprise many people, who run away with the notion that fruit cannot be grown in Ireland. Pyramids in the open garden were carrying equally heavy crops. Apples, too, are an astounding crop on pyramids and espaliers, but the palm must be awarded to an espalier-trained tree at the back of the herbaceous borders. As near as I can recollect the tree would be 20 feet long and 6 feet high, and was carrying several hundreds of magnificent fruit. The gardener, Mr. Wilmot, calls it Summer Queen. Is it a local variety? I have never seen or heard of it before.

— BEGONIAS.—In a conservatory in the same gardens I saw the finest collection of single and double Begonias raised from seed purchased from Messrs. Laing of Forest Hill, that I have yet seen outside of that famous home for Begonias. If The Grange were near London the Messrs. Laing would have to look to their laurels. The present wet season has again proved the value of Begonias as bedding plants. Here, as at home, we find the beds of Begonias a brilliant mass of flower. Pelargoniums, on the contrary, had no flower at all, but a grand lot of leaves. In the flower garden two large beds of Clematis Jackmanni—formed by training the growth to wires fixed a foot high—were strikingly beautiful objects, and well worthy of imitation.

— EUCHARISES appear to be happy enough at The Grange, judging from the luxuriant foliage and the forest of spikes now commencing to push up. In the same house—an ordinary plant stove—was a small collection of Orchids. Dendrobiums had made excellent stout short-jointed growth, and the plants were then being removed to an early vinery to rest. Cattleyas were making grand growth; all were in excellent health. A fine piece of *Davallia fijiensis*, measuring 12 feet in diameter, was especially noteworthy. A few specimen *Adiantums*, with other foliage and flowering plants, are grown here. Fruit under glass calls for no special notice. It may interest your readers to know that Nuts are a grand crop this year in this county. —HANDY ANDY.

— NAMING EXHIBITION FLOWERS.—In order to avoid disappointment to exhibitors of such flowers as Begonias, Cinerarias, Calceolarias, Cyclamen, &c., would it not be as well if those who have the drawing up of prize schedules would state in their rules that such plants should be exhibited without names? Let the exhibitor only put one card, naming the class of plants for the public benefit, for information of visitors. The present rule of schedules, which compels the naming of everything, surely ought not to apply to seedlings. In these days, when so many new varieties of softwooded plants are constantly coming to the front, something ought to be done at flower shows to avoid confusion of varieties. For my part I do not approve of gardeners exhibiting seedling plants or flowers and placing whatever names they choose upon them. If they exhibit a collection of Gladioli or Dahlias which have been grown from mixed seed, let such be named, "seedlings only," otherwise a visitor might be tempted to take down a name of some striking variety, and in vain try to obtain the plant at some nursery. I consider only nurserymen ought to name seedlings, at the same time to enter them in their respective catalogues, then the public would have a better chance to obtain the varieties exhibited.—A. J. L., *Hants*.

— THE news of the death of MISS MARIANNE NORTH, the accomplished botanist and artist, who a few years ago presented to the nation an exhaustive botanic picture gallery at Kew Gardens, will be received with widespread regret. This lady, in the course of her travels, made a collection of pictures of highly interesting subjects, painted by herself from Nature. It is virtually a pictorial record of her expedition round the world. Among the countries whose natural products were thus carefully delineated may be mentioned Teneriffe, Brazil, Jamaica, California, India, Ceylon, Borneo, Singapore, Java, Japan, Australia, and New Zealand. Besides the scientific interest of the collection there are several fine landscapes and striking bits of natural scenery, as well as glimpses of the social aspects of life in those lands. The pictures and objects are to be seen in a building, specially erected at her own expense, in the Royal Gardens, Kew. In the pursuit of her art Miss North visited more lands than any painter of the time. A quarter of a century

ago she visited the East, and for two years knew the fascinations of Egypt and Syria. It was her Eastern tour, perhaps, that determined her final choice of painting as a profession; for though she had practised it for years it was rather as a pastime and an accomplishment. As a painter Miss North specially cultivated landscape and natural history. Her Sicilian landscapes, painted twenty years ago, are well known, and attracted much attention at the time. Miss North's last journey to South America brought on a long and painful illness, to which she has just succumbed at her residence in Gloucestershire. She was sixty years of age.

— THE YORK GALA.—A meeting of life members and guarantors of the York Gala Society was held recently at the North-Eastern Hotel, under the presidency of Sir Joseph Terry. The following were present: —Ald. Rooke, Ald. McKay, Councillors Browne and Milward; Messrs. Balmford, Blenkin, Dunkley, Anderson, Craven, and Border. Sir Joseph Terry said it was a pleasure to learn that this year the Society had been very fortunate. They had given freely of their profits, and they anticipated another year giving as they had done on the present occasion. The total profit on the fête had been £258 13s. 2d., and the Committee had agreed to make the following donations:—County Hospital, £40, Dispensary £40, Bootham Asylum £20, Charity Schools £20, Boys' Industrial School £10, Girls' Industrial School £10, the Penitentiary £10, and the Yorkshire Society School in London £10. A few days after their last meeting the Committee received information of the death of Mr. B. S. Williams of Upper Holloway, and a request that they would contribute to the proposed "Williams" Memorial fund. They had had the advice of Mr. Williams since the inauguration of the gala. It was, therefore, with much satisfaction that the Committee had resolved to give a donation of £10 to the Memorial fund. Votes of thanks were accorded to the following officers:—The Sheriff of York (Mr. Councillor T. Clayton), President; Sir Joseph Terry, Chairman; Mr. Joseph Wilkinson, Treasurer; and Mr. C. W. Simmons, Secretary. Similar acknowledgments were paid to the officers of the 10th Royal Hussars, for allowing their band to play at the gala; to the donors of special prizes; and to Mr. J. Welburn (N.E.R.) for providing a satisfactory service of trains. The fixing of the date of the next gala was left to the Floral Committee.

— MANY of our readers to whom the name of "WILTSHIRE RECTOR" has long been familiar, will regret to hear that through ill health he has been obliged to resign his living of Hardenhuish, near Chippenham. For many years Mr. Headley charmed as well as instructed the readers of this Journal by his admirable papers on rural subjects generally, and more particularly by those treating of fowls and pigeons. We extract the following from the *Devizes and Wiltshire Gazette*:—"We regret to learn that the Rev. A. Headley, for many years rector of Hardenhuish, and who has been well known in and near Chippenham for more than a generation, has been compelled to resign the living through failing health. After being at Christian Malford as curate to the late Rev. R. V. Law, Mr. Headley went to Hardenhuish in 1856, first as curate in charge, and afterwards (in 1857) as rector. During the thirty-three years that have since elapsed many changes have taken place; and we may add, many improvements, and as long as health and strength lasted we know of no one in the neighbourhood of Chippenham who took a more lively and sympathetic interest or who was always more ready to lend a helping hand in any good cause, not only in his own parish, but in the town in whose immediate neighbourhood his lot had been cast, than Mr. Headley. In his earlier years he was a most active supporter of the Chippenham Literary and Scientific Institution, and delivered various interesting lectures in the Town Hall. He was also the President of the Chippenham Penny Readings in their earlier and better days, and was widely known as the 'Wiltshire Rector' of the *Journal of Horticulture*, on whose staff he acted as a valued correspondent for upwards of twenty years. He was one of those who helped to start the Chippenham Horticultural Society, now twenty years since, and always took a lively interest in gardening, poultry, pigeons, and other kindred pursuits, which do so much to make a country clergyman friendly with his neighbours and parishioners. Turning, in conclusion, to the most important part of his work, the spiritual welfare of the parish in which he was so long rector, the parishioners generally will mourn his loss as one who preached powerfully and eloquently the great message of Salvation; while as a kind friend in trouble and affliction he will long be held in affectionate remembrance. Mr. Headley was an earnest supporter of the Church Missionary Society, and for many years local Secretary of the Church Pastoral Aid Society. Two years since he had a slight seizure, followed by another in the beginning of

this year, and we understand he leaves next month under medical advice for the milder climate of South Hants, where he has taken a house, and where, we trust, he may be spared for some years to come."

— ALLOTMENTS AND SMALL HOLDINGS.—The return of allotments and small holdings in Great Britain, obtained from the Board of Agriculture by the Inland Revenue Department, has just been issued as a Parliamentary paper. It appears that there are 455,005 separate detached allotments now existing, and 409,422 small holdings other than allotments. These figures show a very large increase in the number of recorded allotments, and an increase also, although less remarkable in extent, in the number of small holdings. The growth of allotments may be estimated by the following figures referring to the three periods named:—1873, 246,398; 1886, 357,795; 1890, 455,005. It will be observed that the rate of annual increase in the last four years has been apparently three times as rapid as between 1873 and 1886. In the report which precedes the return Mr. P. G. Craigie, Director of the Statistical, Intelligence, and Educational Department, points out that considerable local variations occur in the proportions of allotments of a quarter of an acre or less and allotments between that size and 1 acre. On the whole the smaller class outnumber the larger by much more than two to one; but in particular counties the proportions are reversed, while in England as a whole there are 310,698 allotments under a quarter of an acre, and only 130,326 above that limit in Bedfordshire, Huntingdon, Norfolk, Suffolk, and Worcester the larger type of allotments prevails, and in the East Riding of York, Lincolnshire, and Cambridge the allotments exceeding a quarter of an acre are nearly twice as numerous as those below that area. The counties showing the largest number of allotments are Northampton with 26,229, Wiltshire with 23,723, Leicestershire with 23,396, and Nottingham with 21,253. An examination of the details now supplied indicates that many allotments are in urban parishes, and presumably occupied by artisans. The mining counties of Durham and Glamorgan show a remarkable increase since 1886, their allotments appearing to have been more than doubled in the last four years. Large increases also appear in Kent and Stafford. In Devon, Essex, and Warwick comparatively little change is reported. In only four English counties is any decline apparent. In Cornwall the collectors ascribe the diminution as partly due to the removal of country labourers to more remunerative railway work. In Hereford, Northumberland, and the East Riding of Yorkshire there appear to be also fewer allotments, some of those returned in 1886 having been improperly included under that title, while in other instances plots then occupied as allotments have been required for building and other purposes. Adding to the 409,000 small holdings and 455,000 separate allotments, the special allotments granted by railway companies, so-called garden allotments attached to cottages and other cases, it is estimated that in one form or another *petite culture* is in existence in Great Britain in at least 1,300,000 separate instances.

MONTBRETIAS.

M. CROCOSMÆFLORA is a well known plant of great value for cutting at this season. *M. Pottsi* I have cultivated for years, but it never yet flowered; nor do I think that this experience is singular, as others who have tried it have had the same unpardonable offence to complain of.

I have had the pleasure of making the acquaintance of a group of varieties raised by the indefatigable hybridist of Nancy, M. Lemoine, which supplies us with a new and what will be an indispensable class of flowers for summer and autumn decoration. They are quite hardy, very floriferous, and the flowers of the most beautiful shades; in fact, in the yellows especially I know no flower of exactly the same tones as are to be found in these. Like *Gladiolus*, the flowers continue opening after being cut until the last is reached. They have the advantage of the *Gladiolus*, however, in the rapidity with which they can be increased. Some of the sorts are still rather expensive, but none of them extravagantly so. The following are sorts of yellow shades, and must be seen to be appreciated:—*Elegans*, very pretty; *Gerbe d'Or*, a very beautiful plant, extra free; *Drap d'Or*, very fine clear yellow with large flowers; *Rayon d'Or*, most beautiful with a brown ring near base of petals; *Solfaterre*, very fine clear yellow. These which follow are of different shades:—*Etoile de Feu*, light vermilion, very pretty; *Pottsi grandiflora*, red and yellow; *Incendie*, red, with clear yellow centre, very fine; *Transcendant*, fine clear vermilion shade, throat yellow, very fine. The new sorts of the present year I have not had an opportunity of seeing, but

judging by the advance made in previous years they may safely be added to any collections which may be in course of formation.—B.

DALECHAMPIA ROEZLIANA ROSEA.

THIS may not inaptly be termed a perpetual flowerer, for it produces its flowers nearly throughout the year, and that on plants only a few inches high. The leaves are long, Oak-like, deep green when full-sized, but pale rose-coloured in a young state, very durable, and so abundant as to completely cover the stem. Above this mass of deep green foliage are produced the flowers, which owe their beauty to the large rosy-pink bracts, which are very persistent, continuing several days in beauty. Its flowers are sweet-scented, but its chief attractions are its dwarf leafy habit, free-flowering character, and continuous flowering. It springs up freely from seed; indeed is such a weed with me in the stove that I have not had to resort to any other mode of propagation, and owing to its continuous blooming the seedlings are plentiful at most times of the year. I usually take up the plants in spring when they have two or three leaves besides the seed leaves, place them singly in 3 inch pots, using a compost of equal parts turfy loam, sandy peat, and leaf soil, with a free admixture of silver sand, and place them on shelves in the stove. I sprinkle the foliage twice daily, and shade from bright sun for a few days if the sun is powerful. In these pots the plants remain until the end of July, when they are shifted into 4½-inch pots, and encouraged with heat and an abundance of moisture. Syringing twice a day may be practised up to October, when they should be kept rather dry—not so much so as to affect the foliage, though the plant will endure the extremes of dryness and wet, heat and cold, better than any other I know. By keeping the plants moderately dry we cause however, a cessation of growth, and they will flower as soon as the days have turned, and continue doing so from January to May.

If we wish the plants to flower in less than 4½-inch pots we have only to turn them out of the 3-inch pots, remove all the soil we can, and place them again in the same size of pot. They will flower well in this size of pot, and whether we pot them or not they invariably flower when 3 to 4 inches high. In fact I have some plants now in 3-inch pots that have not been without their bracts for months, and are not likely to be, as they still throw out more.

It is well to know, that though this plant is almost a continuous flowerer, there are times when the flowers are produced more abundantly than at others. These periods are with me early in spring and late in summer—February, March, and April; and September, October, November, and December. Whenever it begins to grow it begins to bloom, for the flowers are produced from the axils of the leaves, and by remembering this we can have the plants in flower at any time required. We have only to keep the plants rather dry and cool for, say, two or three months, and then introduce them into a house with a temperature of from 70° to 75°, fresh pot, encourage with free watering and atmospheric moisture, and it begins to grow and flower. Half its beauty consists in the manner in which it clothes the stem with its persistent long leaves, which hide that completely, and hang down over the pot.

As a plant for table it is unique, and very handsome specimens may be formed. The way to do this is to stop a seedling plant when 3 inches high, which will cause it to break and produce two or three shoots. These should be stopped again at the third leaf, and repeated until we have half to a dozen shoots, no flowers being permitted to more than show until we secure the number of shoots required; then it is well to keep the plant rather dry and cool for a few weeks, and introduce it into heat and moisture when we want it to bloom, a month or six weeks being required. The plants need not be potted oftener than twice a year, and I consider March and July the best months. The compost for both old and young plants may be the same. It seems to delight in vegetable soil, and the bracts are improved in size by the addition to the compost of one-fourth of old cowdung or well-decayed manure.

A 6-inch pot is large enough for a plant with half a dozen shoots, whilst an 8 or 9-inch pot will well grow one with a dozen. The plants for decorative purposes are best in small pots; in their case, instead of shifting into a larger one, at potting, reduce the ball and return it to the same sized pot. The fresh soil seems to do wonders—plants do not grow any better because we leave the old soil, but seem to benefit only by the fresh. A plant in a 6-inch pot with half a dozen shoots, each carrying as many flowers, or twice the number of bracts (they just appearing so high above the foliage as to show to good advantage) not more than 9 inches to a foot high, and with foliage drooping over and partly hiding the pot, is a subject well worth our attention, and a plant twice the size is

very handsome. Whether grown in the shade or in the full sun—at a few inches or several feet from the glass, it is always dwarf, always free-growing and free-flowering.—G.

SOLANUM WENDLANDI.

SPECIMENS of this handsome *Solanum* were shown from the Royal Gardens, Kew, at one of the meetings of the Royal Horticultural Society this year, and the plant is so well worthy the attention of cultivators that we have had the accompanying illustration prepared to

deposits of stratified drift cover its surface, almost everywhere making sandy and gravelly soils or light sandy loams. The flat coast plain, intersected by large bays, and smaller inlets surrounded by marshes, is fringed along its shore by hillocks of loose and often drifting sand. The long-leaved Pine or Cuban Pine form very open forests, which cover a large part of the plain. The damp, sandy soil of these flat woods, devoid of surface drainage, is covered with a dense carpet of Cyperaceous plants, *Rhynchospora*, *Scirpi*, *Fuirenas*, *Elcocharis*, and numerous species of *Nyris*, *Eriocaulon*, and *Sarracenia*s. Their monotony is relieved by groves of Live Oak and Wax Myrtle on the sands of the seashore and the more varied tree growth of the richer spots of the swampy depressions. Magnolias, Laurel Oak, Water Oaks, Sweet Gum and



FIG. 29.—*SOLANUM WENDLANDI*.

give an idea of its characters. As grown at Kew in the old Lily house it is very attractive, its rich purplish crimson flowers being produced in profusion. It is not difficult to manage, but requires a good stove temperature, a moist atmosphere, and an open well-drained soil.

THE FLORIDA SPRUCE PINE.

THE littoral belt extending from the alluvial lands of the Mississippi River eastward to the neck of the Peninsula of Florida presents no essential difference in climate or soil, or in the general features of vegetation throughout its entire length. Meteorologically it all belongs to one province. The line of 68° mean annual temperature follows the northern border along the thirty-first parallel of north latitude, and the isotherm of 72° follows the seashore. The mean annual precipitation between these limits varies from 48 to 54 inches, showing but slight differences in its distribution throughout the year. Highly silicious

Black Gum are the most prominent on the hammock land, while the Bald Cypress represents the water-soaked banks of the rivers and their estuaries.

One who travels this coast from west to east is struck by the successive appearance of plants which are never or very rarely met with in the section left behind. If he leaves the eastern shore of the Bay of Mobile his attention is constantly directed to the plants which he has never encountered in the coast region between the western shore of the bay and the Mississippi delta. After crossing the extensions of the sea which intersect this coast, and entering the basins of the great streams which empty into them, he is surprised by the sudden appearance of plants not observed before, most of them becoming more frequent as he approaches the region which discharges its waters into the Atlantic. It would seem that while the wide bays of this coast, with the river basins connected with them, form the only obstacles to the general diffusion of plants over the littoral region of the eastern gulf States, yet to many species which are found on the South Atlantic seaboard these

obstacles prove insurmountable, and absolutely prevent their spread toward the west. It would seem also that other plants whose centre of distribution lies toward the western confines of this belt are prevented by the same difficulties from making any progress toward the east. At another time it may be of interest to give instances of this restriction of different species to given limits, instances which cannot but excite interest in the problem of plant distribution throughout a region in which the same climate, soil, and topographical features prevail.

Among the forest trees which one would observe in connection with this distribution of plants, *Pinus clausa*, the Florida Spruce Pine or Sand Pine, would occupy a prominent place. Among the Pines of the Southern United States this species is confined to the narrowest limits. It is found from the western boundary of Florida to Key West, where it was observed by Professor Sargent, and along the eastern coast of the peninsula, on the rolling uplands to their termination in the lower part of Volusia County, in the flatwoods and swamps of the further south. This Pine is strictly confined to an arid sandy soil; it flourishes on the dunes of pure white drifting sands which fringe the shore, where its roots often fail to obtain a firm hold, so that it often succumbs to the force of storms, and it is seen bent low in the direction of the prevailing wind, and sometimes is entirely prostrate. On these sterile wastes the tree is rarely more than 20 or 25 feet high, while on the dry ridges with a more solid soil, as near Pensacola, it attains the dimensions of a medium-sized tree, and on uplands of the best quality, where the apparently barren ground is underlaid by a sub-soil of the fertile tertiary marls, it arrives at the dimensions of a stately forest tree, associated with mighty Magnolias, large upland Hickories (*Hicoria glabra* and *H. tomentosa*), Live Oaks, Laurel Oaks and Post Oaks.

On these fertile upland hammock-lands, as found prevailing back of Halifax Bay, the Sand Pine arrives at its best development. Trees over 75 feet in height and fully 25 inches in diameter are frequently seen here. In this best state of its growth the tree somewhat resembles the Spruce Pine, *Pinus glabra*, with which it is frequently confounded by the settlers.

By the structure of the wood, as well as by morphological characters, this species forms, with *Pinus glabra* and *P. echinata*, a natural group of southern distribution. The leaves are in twos, with a short, deciduous sheath from half an inch to 2 inches or more in length, a half line wide, slender, flexible concave, and slightly keeled on the upper side. The cones are sessile, horizontally inserted during the first year, and strongly reflexed as they reach maturity during the second year. They are from 2½ to nearly 3 inches long, and from 1¾ to 2 inches when open. The exposed portion of their scales, with a slightly prominent umbo, is crowned by an erect, short, and blunt prickle; they remain on the tree closed for several years. The bark of the young trees is rather smooth, roughish in those of fuller growth, furrowed and divided in square scales. The young shoots are tender. At all seasons and stages of growth this Pine is readily distinguished from the Scrub Pine (*P. inops*) by the less rigid, more slender foliage of dark green, and from its allies by the ashy grey, reflexed, rigidly closed cones. It produces its fruit abundantly, and almost without failure, season after season.

The wood of this Pine is of a yellowish colour, the broad sap-wood of a lighter tint. It is soft, easily worked, but wanting in strength and elasticity, and is not durable. Hence as a timber tree it is regarded as of no importance. The old trees of stunted growth from the sand-dunes along the seashore, with a wood of close grain and of greater toughness, are used for masts for the boats of fishermen and other small craft. As pointed out by Professor Mayr, this tree will in future be undoubtedly of importance in the forestry of the States of the lower south, when the reforestation of the denuded sandy Pine barrens, immense in their extent, is demanded by necessity.—CARL MOHR (in *American Garden and Forest*).



SOME NOTES ON NEW ROSES.

THE glorious seed-ripening summer of Her Majesty's Jubilee must surely have had much to do with the fact that three gold medals of the National Rose Society were awarded for seedling Roses this year. To the wonderful advance recently made in light Roses let Her Majesty, Mrs. John Laing, Susanne Rodocanachi, and Madame Joseph Debois bear witness. Is there a grander quartette for robustness of habit, depth of petal, and symmetry of form to be found anywhere? And now we await a corresponding advance in the darker varieties for the back row of the exhibitor's stand. Is one such to be found in Mr. W. Paul's strong growing Salamander, with his fiery crimson centre and regular form? This was without hesitation rightly voted a gold medal. Following the king comes the queen medallist of the year, Margaret Dickson, raised by Messrs. Dickson of Belfast, a pure white Hybrid Perpetual, quite distinct from anything yet sent out, with high centre, perfect form, and such thick foliage, bidding fair to rival William Warden in his mildew-resisting capacities. The blooms at the early Show (the

Crystal Palace) were a trifle thin, but later on in the height of the season, both at Wirral and Birmingham, it was well staged. I should imagine it to prefer a cool season and a good Rose soil.

The third gold medallist was Mrs. Paul, a pink Bourbon of a most distinct shade. Having seen it at home at Cheshunt, I can bear witness to its being a free flowering variety, and will, like its parent, Madame Isaac Pereire, prove a good garden Rose, but I fear it lacks form, an indispensable quality with exhibitors. There was among the new Roses of Messrs. Paul & Son a dark red Hybrid Perpetual which took my fancy as destined for a high position, if not a gold medal, when sent out. Of comparatively new Roses seen at Cheshunt was Scipion Cochet, a dark red H.P. something after the style of Prince Camille de Rohan; Madame H. Pereire, a fine Duke of Wellington; Bruce Findlay, a good red; Monsieur Trievoz, of the Comtesse d'Oxford group, and Ernest Metz, a promising Tea. Other varieties seen at the shows that are worth mentioning are Jeannie Dickson (a dark G. Luizet), Comte Henri Rignon, Cleopatra, Maid of the Mist, and Lady Arthur Hill. The last-named I have grown, and consider it to be an acquisition to the exhibition list, being vigorous, free-flowering, and distinct in colour, though not over-large. For this, as for Jeannie Dickson, we are indebted to the brothers Dickson of Belfast.

Before I finish these brief notes there is yet one more new Rose to notice, Captain Hayward, exhibited at the Crystal Palace, a bright red H.P., à la Gloire de Margottin, with strong wood and good foliage, which will, if not too single, be found useful. This is the last exhibited by one who was of great eminence as a Rose raiser, and to whom exhibitors are indebted for some of the finest Roses in their stands. Princess of Wales, Heinrich Schultheis, and Lady Mary Fitzwilliam (1882), Grace Darling (1884), Her Majesty, and Viscountess Folkestone (1886), Mrs. John Laing (1887), Maid of the Mist and Cleopatra (1889), and several others. By these Roses the name of the late Mr. H. Bennett will long be had in remembrance, and in whose death the Rose world has sustained a grievous loss.—J. H. P.

THE NATIONAL DAHLIA SOCIETY.

THE annual exhibition of Dahlias by this Society must be pronounced a distinct success, for despite the somewhat untoward character of the season, and the fact that sharp frosts were experienced in several localities, some very fine blooms were staged, many of them, indeed, being of exceptional quality. At the same time, there were evidences of roughness and coarseness. No exhibitor appeared to have come farther north than Ipswich, and it is extremely probable the northern growers are reserving their forces for Manchester on the 12th. In a few of the classes open to amateur cultivators the absurd and needless distinction between "Show" and "Fancy" Dahlias is maintained; but in all the nurserymen's classes these two types are shown together, to the manifest added attractiveness of the stands.

In the class for seventy-two blooms, not less than forty-eight varieties, and not more than two blooms of a sort, Messrs. Keynes, Williams, and Co., nurserymen, Salisbury, were placed first with a lot of very fine and clean blooms, including Mr. Spofforth, Miss Cannell, Maud Fellowes, a charming light variety; J. F. West, James O'Brien (Fancy), Rev. J. B. M. Camm (F.), Imperial, Mrs. Langtry, William Rawlings, Duchess of Albany (F.), Majestic (Keynes) a new variety, white ground, edged with purple; Hope, W. Keith, Harry Turner, Mrs. Foreman, Prince of Denmark, a very fine shaded dark variety; Royal Queen, Nellie Cramond, Prince Henry (F.), a very bright and attractive flower; Mrs. Kendal, Flora Wyatt (F.), Gaiety (F.), Madame Soubeyre, Henry Bond, Lady Gladys Herbert, Prince Bismarck, James Vick, very fine shape; Henry Walton, Seraph, Countess of Ravensworth, cream coloured; Richard Dean, a fine purple self; Mrs. Gladstone, the most beautiful light Dahlia grown, and so very constant; King of the Purples, &c. Mr. M. V. Seale, Vine Nursery, Sevenoaks, was a very good second indeed, as might be imagined when the flowers from the Royal Nursery, Slough, had to take second place, having excellent blooms of Henry Walton, Vice-President, James Cocker, Henry Eckford, Mrs. S. Hibberd, J. B. Service, a fine yellow self; Mr. Dodds, James O'Brien (F.), Harrison Weir, James Vick, Purple Prince, W. H. Williams, Henry Eckford (F.), Mrs. S. Hibberd, Willie Garratt, a flower of beautiful form, and very bright; Parrot (F.), Mrs. W. Slack, Mrs. Gladstone, Sunbeam, Peacock (F.), Senator, R. T. Rawlings, a very fine yellow self; Fanny Sturt (F.), General Gordon, J. N. Keynes, &c. Third, Mr. Charles Turner, Royal Nursery, Slough.

In the class of forty-eight varieties, distinct, Mr. C. Turner was placed first with a superb lot of blooms, having evidently reserved his full strength for this class. He had William Rawlings, Agnes, a new yellow self of fine form; Harry Keith, Maud Fellowes, John Standish, an old but still very useful bright crimson self; Perfection (Fellowes), Royal Queen, Clara, Mrs. Hodgson, Robina, Glowworm, very bright orange scarlet; Mrs. Langtry, one of the finest of the tipped flowers; Harry Turner, Flag of Truce, Sunbeam, Richard Dean, J. B. Service, Diadem, John Bennett, Emperor, Constancy, Lustrous, a very bright scarlet crimson flower; James Vick, Mrs. Saunders (F.), James Cocker, Prince Bismarck, R. T. Rawlings, J. B. Service, Goldfinder, Perfection, Agnes, Nellie Tranter, &c. Second, Messrs. Keynes & Co., with John Hickling (Keynes) a new bright yellow self; Illuminator, Mrs. Gladstone, William Keith, Agnes, Miss Fox (Keynes) new, bluish ground heavily edged with lake; J. N. Keynes, Mrs. Foreman, Mrs. Langtry, Miss Cannell, Triumphant, Wm. Rawlings, Eclipse, Flora Wyatt (F.), Parrot (F.), Prince Bismarck, Richard Dean, Majestic (Keynes) new, white ground

heavily edged and shaded with purple; James O'Brien (F.), Gaiety (F.), Duchess of Albany (F.), Henry Bond, King of Purples, James Vick, Thomas Goodwin, &c. Third, Mr. M. V. Seale; fourth, Mr. E. F. Such, nurseryman, Maidenhead.

In the class for thirty-six blooms, not less than twenty-four varieties, and not more than two blooms of each, Mr. George Humphries, florist, Kington Langley, Chippenham, was first with some finely finished blooms, including Maud Fellowes (a variety that seems destined to become as popular as Mrs. Gladstone), Nellie Cramond, R. T. Rawlings, Harry Keith, Crimson King, Mrs. Gladstone, T. S. Ware, Mr. David Saunders, white ground edged with purple; Countess of Ravensworth, Earl of Ravensworth, General Gordon (F.), George Barnes (F.), Willie Garratt, Agnes, Colonist, Ovid, Henry Walton, Harry Turner, Miss Cannell, Rosetta, Mrs. Saunders (F.), Lustrous, Vice-President, a fine old and very useful flower; William Rawlings, Agnes, Goldfinder, Mr. Glasscock, John Henshaw, James Stephens, Mr. Harris, Matthew Campbell (F.), &c. Second, Messrs. Heath & Sons, nurserymen, Cheltenham, with good blooms of William Keith, Seraph, Richard Dean, Mrs. Langtry, Harry Turner, John Standish, Henry Bond, Flora Wyatt (F.), Mrs. Gladstone, Mrs. G. R. Jeffard, Thomas Hobbs, Clara, John Henshaw, Sir C. Mills, a Kentish raised yellow self; Statesman, Henry Bond, and Lord Chelmsford. Third, Messrs. J. Saltmarsh & Son, nurserymen, Chelmsford.

There were six collections of twenty-four blooms, distinct, and Mr. John Walker, nurseryman, Thame, came in a good first with Mr. Gladstone, Prince of Denmark, Maud Fellowes, James Vick, Mrs. F. Foreman, Jesse McIntosh (F.), Colonist, Willie Garrett, Miss Cannell, John Standish, J. C. Reid, Crimson King, F. J. Rawlings, Senator, Mr. George Rawlings, James Cocker, Mandarine (F.), Hope, Flora Wyatt (F.), Seraph, Imperial, Mr. W. Dodds, and James Bennett. Messrs. Saltmarsh & Son were second, their leading blooms being Harrison Weir, James Vick, Willie Garratt, H. W. Ward, Mrs. Langtry, William Rawlings, Mr. Saunders (F.), Shirley Hibberd, Mrs. Gladstone, Criterion, and Prince of Denmark. Third Mr. G. Humphries.

In the class for twelve blooms there were five competitors, and Messrs. J. Gilbert & Son, St. Margaret's Nursery, Ipswich, were first with capital blooms of Mr. Saunders (F.), Rev. J. Godday, Rev. J. B. M. Camm (F.), Imperial, Crimson King, R. T. Rawlings, Henry Keith, Henry Walton, Ethel Britton, William Rawlings, T. J. Saltmarsh, and Mr. Harris. Second Mr. S. Mortimer, Swiss Nursery, Farnham, a rising young grower, with Peacock (F.), Lord Salisbury, W. H. Williams, Willie Garratt, Mrs. Gladstone, John Cooper (F.), white, heavily striped with lake; Mr. Glasscock, &c. Third Mr. J. R. Tranter, florist, Henley-on-Thames.

In the amateurs' division there was one class for twenty-four blooms of Show and Fancy Dahlias mixed, six varieties being staged. The best, a very excellent lot of blooms, one of the best stands this veteran grower has staged for years, came from Mr. Thomas Hobbs, Lower Easton, Bristol, who had R. Dean, John Hickling, William Keith, R. T. Rawlings, Hartie King (F.), William Rawlings, Joseph Green, Prince of Denmark, Nellie Tranter, John Standish, Mrs. Gladstone, T. W. Girdlestone (Keynes), a new Fancy, lilac, heavily flaked and splashed with deep red; Mrs. McKenzie, Excellent, Vice-President, Mr. W. Slack, Willie Garratt, Alice Emily (Keynes), a new delicate buff yellow self of fine quality; Thomas Hobbs, Arthur Blick, Henry Walton, Mr. Harris, and Mr. D. Saunders. Second, Mr. J. T. West, gardener to W. Keith, Esq., Cornwalls, Brentwood, with excellent blooms of William Keith, Mrs. Gladstone, R. J. Rawlings, Alice Emily, Mrs. Langtry, J. W. Lord, Crimson Globe, Glowworm, Willie Garratt, Mrs. Saunders (F.), J. T. West, Shirley Hibberd, J. B. Service, Henry Glasscock (F.), Prince of Denmark, &c., and third, Mr. Henry Glasscock, Bishop Stortford.

With twelve blooms of show Dahlias only Mr. S. Cooper, Hamlet, Chippenham, was first, with T. J. Saltmarsh, Willie Garratt, George Barnes, self; R. T. Rawlings, Maud Fellowes, Crimson King, Goldfinder, Harry Keith, Thomas Hobbs, Vice-President, Mrs. Gladstone, and Harry Turner. Second, Mr. George Arnold, Leighton Buzzard, whose best blooms were W. J. Lord, J. C. Quennell, a yellow self; William Rawlings, Mrs. Gladstone, Chris. Ridley, and Joseph Ashby. Third, Mr. A. Ocock, Havering Park, Romford. The best six out of five competitors came from Mr. H. Heremans, jun., Chippenham, who had R. T. Rawlings, Harry Keith, Eclipse, T. J. Saltmarsh, Major Clark, a dark choice late self; and Mrs. Gladstone. Second, Mr. J. Hurst, Putney Road, Enfield Highway, with R. T. Rawlings, Lord Chelmsford, Harry Keith, Mrs. Langtry, Mrs. Gladstone, and Willie Garratt. Third, Mr. J. Gilbert, Freshwater, Isle of Wight.

With twelve blooms of Fancy Dahlias, Mr. J. T. West was first with Mrs. Saunders, Dorothy, T. W. Girdlestone, Duchess of Albany, Frank Pearce, one of the best formed Fancy varieties in cultivation; Gaiety, Salamander, Mrs. N. Halls, Henry Eckford, George Barnes, John Forbes, and Hugh Austin. Second, Mr. S. Cooper, with Major Barttelot, orange, heavily striped with maroon; Mrs. Saunders, Dorothy, John Cooper, Mrs. N. Halls, Duchess of Albany, Henry Eckford, &c. Third, Mr. H. Glasscock. Mr. H. Heremans had the best six Fancy varieties, showing good blooms of Major Barttelot, orange, heavily striped with maroon; John Cooper, white, striped with lake; Dorothy, Mrs. Saunders, Matthew Campbell, and Mrs. N. Halls. Second, Mr. T. Hobbs, with Flora Wyatt, Frank Pearce, Chorister, Magnet, Hartie King, and Mrs. Saunders. Third, Mr. W. Seaman, Brentwood.

A series of very interesting classes are those for Show and Fancy Dahlias in colours. The best six blooms of any dark Dahlia were those of Willie Garratt, from Mr. Thomas Hobbs, Mr. T. Anstiss, Brill,

coming second with James Cocker; Messrs. Keynes & Co. third with Harry Keith, and Mr. Henry Glasscock fourth with Prince of Denmark. The best six blooms of any light Dahlia found eight competitors, all showing Mrs. Gladstone, undoubtedly the most perfect light Dahlia of its day. Mr. J. Walker was first, Mr. Seale second, Mr. J. T. West third, and Mr. T. Anstiss fourth. The best six blooms of any two yellow Dahlias were R. T. Rawlings and J. B. Service, from Mr. J. T. West; and Mr. Seale was third with the same; Messrs. J. Gilbert & Son second—J. C. Quennell and R. T. Rawlings. The best two tipped Dahlias were both Fancies, viz., Peacock and Mrs. Saunders, from Messrs. Keynes & Co., Mr. J. Walker coming second with Mrs. Langtry (S.) and Mrs. N. Halls (F.). Messrs. Saltmarsh & Son were third also with Peacock and Mrs. Saunders. The best two striped Dahlias were Pelican and the Rev. J. B. M. Camm, from Messrs. Keynes & Co. Mr. Glasscock was second with unnamed flowers, and Mr. Seaman third with Professor Fawcett and Duchess of Albany, all Fancy varieties.

Cactus Dahlias made a fine display shown in bold and striking bunches of six blooms. In the nurserymen's class for eighteen varieties Mr. C. Turner was first with Zulu, Professor Baldwin, Empress of India, Amphion, King of the Cactus, Mrs. Hawkins, the old Picta formosissima in fine condition, St. Patrick, Panthea, William Darvell, Mrs. Raynor, Honoria, Juarez, Constance, Sir T. Lawrence, Beauty of Brentwood, Cochineal, and Asia. Second Messrs. J. Cheal & Son, nurserymen, Crawley, with Professor Baldwin, Marchioness of Bute, white tipped with rosy purple; Duke of Clarence, new, extra fine; Empress of India, William Darvell, Mr. Douglas, bright pinkish salmon; H. Patrick, Lady Marsham, Zulu, William Rayner, Robert Mayher, a fine yellow, &c.

The best twelve came from Mr. M. V. Seale, who had excellent examples of Henry Patrick, Juarez, Mrs. Hawkins, Empress of India, William Darvell, Charming Bride, Cochineal, Panthea, Zulu, Lady Marsham, Centennial, magenta crimson with side margins of deep maroon; and King of the Cactus. Second Messrs. Paul & Son, Old Nurseries, Cheshunt, who had William Darvell, Henry Patrick, King of the Cactus, Zulu, Honoria, Mrs. G. Reid, pure white edged with lake; Cochineal, Asia, and Mrs. R. Smith. Third, Messrs. Keynes & Co., having fine blooms of Amphion, Centennial, Panthea, Beauty of Brentwood, Honoria, and Marchioness of Bute.

Pompon Dahlias were grandly shown also in handsome bunches of ten blooms each. Messrs. Keynes & Co. were first with a very fine lot, consisting of Lady Blanche, Whisper, Favourite, Darkness, Red Indian, Dove, Golden Gem, E. F. Jungker, Mabel, Hector, lilac purple; White Aster, Phoebe, orange shaded with red; Rosalie, Fairy Tales, Grace, Little Duchess, Gem, Eden, Leila, Little Ethel, Little Darkie, Achilles, pale soft rose shaded with maroon; Janet and Admiration. Second, Messrs. J. Cheal & Sons with a very fine collection also, having Isabel, Gazelle, Little Duchess, Iolanthe, H. E. Searle, Favourite, Don Juan, Grace, Guiding Star, Rosalie, Gem, Ariel, Red Indian and Eurydice. Third, Mr. Charles Turner, having the following very fine—Rubens, Thomas Moore, Eccentric, Amelie Barbier, The Mikado, Mabel and Dandy. Messrs. Paul & Son were fourth. In the class for twelve bunches Messrs. J. Burrell & Son, Cambridge, were first with capital bunches of Grace, Karl Goldenburgh, Mabel, White Aster, Favourite, Isabel, Whisper, Henriette, Fanny Weimar, E. F. Jungker, Fairy Tales and Darkness. Second, W. G. Humphries with Gem, Lady Blanche, Darkness, Leila, Dove, Eurydice, H. Milliesky, &c.

Single Dahlias were, as usual, very fine, the large bunches of ten blooms each being particularly striking. Messrs. J. Cheal & Son were first, and indeed they appear to be unconquerable in this class. They had delightful examples of W. C. Harvey, Miss Linnaker, W. Kennett, Albert Victor, Mrs. J. Conninck, Mrs. Bowman, James Scobie, Marion Hood, Miss Henshaw, Maria Lenden, Miss Roberts, Amos Perry, Duchess of Fife, Eclipse, orange centre with mauve edgings; Alba perfecta, Cetewayo, Victoria, Hugo, Guilelaud, white with margins of yellow; Formosa, Duchess of Westminster, Miss Ramsbottom, Duchess of Albany and Northern Star. Second, Mr. M. V. Seale with Amos Perry, Terra Cotta, Victoria, Huntsman, W. C. Harvey, Miss Henshaw, Hugo, Miss Roberts, Mauve Queen (improved), Duchess of Westminster and Lucy Ireland. Third, Messrs. Paul & Son with Winifred, Paragon, Topaz, Dulejnea, &c. There was but one exhibitor of twelve bunches, Messrs. J. Burrell & Co., who had W. Kennett, Mrs. J. Conninck, Amos Perry, Florrie Fisher, W. C. Harvey, Scarlet Defiance, Huntsman, Miss Roberts, Miss Gordon and Cetewayo.

In the amateurs' division the best six bunches of Cactus Dahlias, six blooms in a bunch, came from Mr. J. T. West, who had Honoria, Empress of India, Marchioness of Bute, Panthea, Mr. Hawkins, and Mr. H. M. Stanley. Second, J. G. Fowler, Esq., Woodford, with Mr. Hawkins, Annie Harvey, King of the Cactus, Henry Patrick, Zulu, and William Darvell. Third, Mr. W. Mist, Ightham. With six bunches, three blooms in each, Mr. H. Glasscock was first with Mr. Hawkins, Amphion, Black Prince, Beauty of Brentwood, Panthea, and Robert Mayher. Second, Mr. S. Cooper; third, Mr. H. Gibbs, Ightham.

The amateur element in Dahlia culture do not appear to care much for single Dahlias, as in the two classes set apart for them there was but one exhibitor in each. The best six bunches, ten blooms of each, came from Mr. H. Glasscock, who had Duchess of Fife, The Mikado, A. J. Harris, James Scobie, Miss Jefferies, and Duchess of Albany. Mr. E. Mawley, Berkhamstead, had the best six bunches, three blooms of each, in Enchantment, Amos Perry, Marian Hood, Miss Henshaw, Gertrude, and Sunningdale White.

Several seedling Dahlias were exhibited, but only a few first-class

certificates of merit were awarded. Messrs. Keynes & Co. received one for Fancy Comedian, deep apricot ground, striped with dark crimson and slight edgings of pale mauve, a finely formed variety, quite novel in colour. To Messrs. J. Cheal & Sons for Cactus Dahlia Duke of Clarence, maroon with side edgings of crimson, a bold and striking flower of large size. To Mr. T. S. Ware for single Dahlia Duchess of Fife, bright deep yellow, with side edgings of brownish red, a medium-sized flower of fine shape; and Maude, white, with side margins of crimson purple.

In addition Messrs. Keynes & Co. had The Kaiser, a large crimson, self, rather flat in shape; J. C. Vaughan, a small yellow self, pure in colour, fine shape, petal, and substance; Dandy (Fancy), buff yellow, heavily flaked with crimson; Miss Barber (Show), white tipped with purple; and the Hon. C. Bouverie, crimson and maroon shadings. Mr. G. Harris, Orpington, had Model (self), orange, red shaded, fine shape and petal; Favourite (F.), pale mauve, pink ground shaded with crimson, very promising; Canary Bird, yellow self; and Freedom. Several new Cactus and single Dahlias were shown, but nothing worthy of notice. Mr. T. S. Ware made a great display with cut blooms of Dahlias of various types, and Messrs. Cheal & Son also staged a quantity, with hardy flowers, &c.

THE CRYSTAL PALACE FRUIT SHOW.

SEPTEMBER 5TH AND 6TH.

THE annual Fruit Exhibition at Sydenham was held on the above dates under most favourable circumstances as regards the weather, number and quality of the exhibits staged in competition for the liberal prizes, and the attendance of visitors was large on both days of the Show. This may certainly be regarded as the National Fruit Show, and the great event of the year. All the classes are open. There are no entrance fees to pay, and, the prizes being liberal, the best growers residing in various parts of the country enter into the contest in all the leading classes. The Show held on Friday and Saturday last was the best all-round Exhibition of fruit held there during the last five or six years. Grapes, Peaches, Nectarines, Pears, Apples, and Plums were all well represented for the season. As in other years the fruit was staged on continuous tables about 6 feet wide, these being divided by placing a longitudinal row of bright foliaged plants and Ferns along the middle. The arrangements made by Mr. W. G. Head, the courteous and efficient garden and Show Superintendent, for the convenience of exhibitors and the public were everything that could be desired.

COLLECTIONS OF FRUIT.

The three classes usually devoted to these make quite a grand show in themselves. The first was that for not less than twenty dishes, to consist of eight bunches of Grapes in four varieties (two white and two black, two bunches of each variety), two Pines, two Melons, two dishes of Peaches, two of Nectarines, and two of Plums, the remainder to be distinct kinds. The prizes were £12, £8, and £4. Four capital collections were put up in competition for these by Mr. James McIndoe, gardener to Sir Joseph W. Pease, M.P., Hutton Hall, Guisborough, Yorkshire; Mr. H. W. Ward, gardener to the Right Hon the Earl of Radnor, Longford Castle, Salisbury; Mr. Goodacre, gardener to the Right Hon. the Earl of Harrington, Elvaston Castle, Derby; and Mr. R. Dawes, gardener to the Hon. Mrs. M. Ingram, Temple Newsam, Leeds. The contest for first position, however, was between the productions staged from Hutton Hall and Longford Castle Gardens, the latter consisting of twenty-seven dishes, and the former of twenty-one. Mr. McIndoe ultimately secured the premier position with a very imposing collection, comprising well-coloured bunches of Alnwick Seedling and Gros Maroc Grapes, good sized bunches of Trebbiano Grape having small green berries, and fairly good bunches of Buckland Sweetwater Grapes, a good sized Queen Pine, having regular well-developed large bright pips, and a small Smooth Cayenne Pine, large well-coloured fruits of Blenheim Orange and Lockinge Hero type, Melons, medium-sized even fruits of Exquisite Peach, Humboldt Nectarines of fair size and good colour, Darwin Nectarine, and medium-sized pale fruits of Prince of Wales Peach, fine Brown Turkey Figs, and Bryanston Green Gage and Kirke's Plums, Imperial Lemon, good in size, shape, and colour; Exquisite Orange, large and bright; good, bright, even fruits of Ribston Pippin Apple, Bigarreau Napoleon Cherry, Williams' Bon Chrétien Pear, and a large dish of Moor Park Apricots. Mr. Ward was placed second, and had large solid bunches of Muscat of Alexandria Grapes, having well-coloured berries; large shapely bunches of Alicante, Gros Maroc, and Foster's Seedling Grapes, fine in berry and colour; good Cayenne Pines, about 5 lbs. and 5½ lbs. each; well coloured Lockinge Hero and Blenheim Orange Melons; exceptionally fine Sea Eagle and Prince of Wales Peaches; Elruge and Pineapple Nectarines, even, well-coloured fruits; fine Guthrie's Late Gage, and moderate Mitchelson's Plums; grand Brunswick Figs, Imperial Lemon and St. Michael's Orange, the fruits being clean, even, and bright, though not quite so large as those in the first prize collection; clean bright fruits of Moor Park Apricot, dishes of fine Worcester Pearmain Apple, and Williams' Bon Chrétien Pear, and a pyramid of large well-coloured Morello Cherries, and Vicomtesse Hericart de Thury Strawberry, with some dishes of small fruits. Mr. Goodacre was third, his best dishes being large handsome bunches of Muscat of Alexandria and Gros Maroc Grapes, the berries being large and beautifully coloured; Lockinge Hero Melon, Violette Hâtive Peach, and Victoria Nectarine.

In Mr. R. Dawes' collection were fine bunches of Alicante and Gros Guillaume Grapes, the latter being about 7 lbs. each, fine in berry and well coloured.

In the next class, for a collection of twelve dishes, six bunches of Grapes, three white and three black, and two Melons, were required; the remainder to be distinct kinds. Five good all-round collections were staged. The three prizes offered were £8, £6, and £4. Mr. P. Blair, gardener to the Duke of Sutherland, Trentham Hall, Stoke-on-Trent, was placed first for large loose clusters of Alicante and fairly good bunches of Muscat of Alexandria Grapes, an even dish of well coloured Violette Hâtive Peaches, good Williams' Bon Chrétien Pear, a fully ripe Queen Pine, Trentham Seedling and Best of All Melons, the latter being half green; Brown Turkey Figs, medium size and over-ripe exhibition purposes; Morello Cherries, Lord Napier Nectarine, and Moor Park Apricots in good condition. Mr. A. Miller, Rood Ashton Park, Trowbridge, was second. He had fine bunches of Muscat of Alexandria and Black Alicante Grapes, Pine, Melons, Peaches, and Brunswick Figs. Mr. H. W. Ward was third, his collection having solid well coloured bunches of Muscat of Alexandria Grapes, fine Brunswick Figs, Pineapple Nectarine, Sea Eagle Peach, Lockinge Hero and Blenheim Orange Melons.

In the collections of eight kinds four entered in competition for the three prizes offered. Mr. Ocock, gardener to Mrs. McIntosh, Havering Park, Romford, was first, staging good Black Hamburg and Muscat of Alexandria Grapes, Golden Perfection Melon, Williams' Bon Chrétien Pear, Noblesse Peach, Brown Turkey Figs, Pineapple Nectarine, and Worcester Pearmain Apples, all being in good condition. Mr. Charles Warden, Clarendon Park Gardens, Salisbury, was a close second, showing good Madresfield Court Grapes, Sea Eagle Peach, Pineapple Nectarine, and Brunswick Figs. Mr. L. Budworth, gardener to C. Hill, Esq., Rockhurst, East Grinstead, Sussex, was third.

GRAPES.

The principal class was that for a collection of ten varieties, two bunches of each, and those staged included fine well-coloured Grapes. Mr. Goodacre was first, having Black Prince, good Alnwick Seedling, Alicante, fairly well coloured, and of good size and shape; good Lady Downe's; large bunches of Muscat Hamburg, with the colour going off; good bunches of Muscat of Alexandria; Black Hamburg, deficient in colour, though good for the time of year; Foster's Seedling, good bunches; also good and fairly well coloured bunches of Madresfield Court and Gros Maroc. Mr. McIndoe's second prize bunches comprised good Lady Downe's; Gros Colman, beautifully coloured and good in berry; Buckland Sweetwater, small Duke of Buccleuch, Trebbiano, small and green in berry; two good bunches of Gros Guillaume, perfectly black, but one bunch was badly rubbed; good sized Black Hamburg, and fairly coloured; Madresfield Court, and Gros Maroc. Mr. Warden, Clarendon Park Garden, Salisbury, was third with bunches of medium size and well coloured, his Muscat Hamburg and Madresfield Court being neat and perfectly black.

Four good collections of ten bunches in five varieties, two bunches of each, were staged. Mr. Taylor, gardener to Alderman Chaffin of Bath, being first; Mr. Osman, gardener to S. J. Baker, Esq., Ottershaw Park, Chertsey, being a very good second; and Mr. Reynolds, Gunnersbury Park Gardens, Gunnersbury, third. Mr. Taylor's collection consisted of handsome well-finished bunches of Muscat of Alexandria, Madresfield Court, Alicante, Alnwick Seedling, and Gros Maroc, Messrs. Osman and Reynolds staging nearly the same varieties. The Lady Downe's in the other show production were splendid.

Muscat of Alexandria.—Mr. Taylor deservedly secured the post of honour with long tapering bunches of a beautiful amber colour. Second, Mr. C. Griffin, gardener to Miss Christy, Coombe Bank, Kingston, who also had large bunches fairly well coloured. Mr. Blick, gardener to Martin B. Smith, Esq., The Warren, Hayes Common, Kent, was a good third. Four competed.

Gros Maroc.—Seven were staged, the first prize going to Mr. A. G. Hooking, gardener to D. W. Graystone, Esq., Hurst Hill, West Molesey, for large well developed bunches beautifully coloured. Second, Mr. G. Reynolds, with good sized bunches and splendid berries well coloured. Third, Mr. W. Goodall, gardener to F. Morrison, Esq., Fonthill House, Tisbury, Wilts, who also had well coloured bunches.

Madresfield Court.—Six good lots of this fine Grape were staged. Mr. Gibson, gardener to Earl Cowley, Draycot House, Wilts, was first, having long handsome bunches, well coloured, and carrying a fine bloom. Second, Mr. Howe, showing neat well coloured bunches, but not so large as the first prize Grapes. Third, Mr. Warden, who also had well finished bunches.

Alicante.—This class was a very strong one, Mr. Osman, among nine competitors, coming first, with large bunches and berries finely coloured. Second, Mr. C. Griffin, with shapely bunches carrying a fine bloom. Third, Mr. Howe, gardener to H. Tate, Esq., Park Hill, Streatham Common.

Any other White.—Mr. Ward here secured the premier position amongst eight competitors with large, well-ripened bunches of Foster's Seedling. Second, Mr. Bury, gardener to C. Bayer, Esq., Tewkesbury Lodge, Forest Hill, with the same variety, fine compact bunches, not so well coloured as the preceding. Third, Mr. F. Jordan, gardener to B. Foster, Esq., The Hill, Witley, Surrey, who also staged Foster's Seedling.

Any other Black.—First, Mr. W. Taylor, with fine bunches of Alnwick Seedling, splendidly coloured, and carrying fine bloom. Second, Mr. Bury, with bunches almost equal in point of merit to the

first prize, but not so well coloured. Mr. Goodacre was third. All the prizes in this class going to Alnwick Seedling. There were six entries.

Classes were provided for baskets of black and white Grapes, containing not less than 12 lbs. each. In the class for black the competition was very keen, six splendid samples being shown. The first prize went to Mr. A. G. Hooking, gardener to W. Graystone, Esq., Hurst Hill, West Moulsey, for Alnwick Seedling in grand condition. Mr. McIndoe was second with the same variety, wonderfully good. Third, Mr. E. Longley, gardener to W. J. Twigg, Esq., Croxted House, West Dulwich, with Gros Maroc, also in good condition. In the corresponding class for white Grapes, Mr. G. Winter, gardener to Mrs. Maw, Walk House, Barrow-on-Humber, was easily first with remarkably fine and well coloured bunches of Bowood Muscat. Second, Mr. McIndoe, with Duke of Buccleuch. Third, Mr. Hooking, with fairly good Foster's Seedling.

PEACHES AND NECTARINES.

The former of these two popular kinds of fruit were staged in large numbers, and in fine condition; scarcely a faulty one could be found among them. Nectarines, though not so extensively staged, were of first-rate quality, the winning dishes in each case having fruits of good size and fine colour. A class was provided for four dishes of Peaches, distinct, six fruits of each. The first prize was well won by Mr. W. H. Divers, gardener to J. T. Hopwood, Esq., Ketton Hall, Stamford, with good sized, highly coloured fruits of the following varieties—Crimson Galande, Prince of Wales, Crawford's Early, and Dymond. Mr. McIndoe was second with good fruits of Golden Eagle, Exquisite, Violette Hative, and Princess of Wales; third, Messrs. Rivers & Son, nurserymen, Sawbridgeworth, Herts, Sea Eagle and Gladstone being good in this collection.

Twenty-one dishes were shown in the single dish class, the majority of them being remarkable for great size and good colour. Mr. A. Alderman, gardener at Effingham Hill House, Dorking, Surrey, was first with splendid fruits of Sea Eagle, Mr. H. W. Ward being a close second with the same variety, and Mr. Divers third with Prince of Wales, finely coloured. For four dishes of Nectarines, distinct, Mr. Divers was well first with large fruits well coloured, the varieties being Rivers' Orange, Pineapple, Dryden and Victoria. Second, Mr. W. Carr, gardener to S. Clark, Esq., Croydon Lodge, with smaller but well coloured fruits of Lord Napier, Rivers' Orange, Spencer and Elrue. Third, Mr. Goodacre, Pineapple being very fine in his lot. Twelve single dishes of Nectarines were staged, that sterling variety, Pineapple, winning all three prizes; Mr. Divers again being first, Mr. Geo. Pymm, gardener to Mrs. Gouldsmith, Rodwell Hall, Trowbridge, second, and Mr. C. Blick, gardener to Martin R. Smith, Esq., The Warren, Hayes Common, Kent, third.

For a collection of six dishes of Peaches and six dishes of Nectarines, distinct, Mr. Divers followed up his previous successes by again taking the first prize with fruits similar to those shown by him in his other collections. The varieties were: Peaches—A. Bec, Crimson Galande, Crawford's Early, Dymond, Prince of Wales and Violette Hative; Nectarines—Rivers' Orange, Humboldt, Pineapple, Dryden, Lord Napier and Victoria. Second, Messrs. Rivers & Son, Sea Eagle and Gladstone Peaches and Byron and Pineapple Nectarines were well represented in this collection.

MELONS.

Sixteen green-flesh Melons were put up. Mr. Mortimer, Swiss Nursery, Farnham, was first with a well-netted, juicy-looking fruit of Sutton's Monarch. Second, Mr. McIndoe, with Best of All. Third, Mr. L. Budworth, gardener to C. Hill, Esq., Roekhurst, East Grinstead, with Hero of Lockinge. Thirteen scarlet-flesh Melons were tabled. First, Mr. J. Neighbour, Bickley, with Scarlet Gem. Second, Mr. G. Woodham, Model Farm Gardens, Green Lane, Dulwich, with Blenheim Beauty. Third, Mr. G. Griffin, gardener to Miss Christy, Coombe Bank, Kingston, with same variety.

PLUMS.

Mr. Ward was first for four dishes of red Plums, distinct, with good examples of Pond's Seedling, Red Magnum Bonum, La Delicieuse, and Sultan. Second, Mr. Neighbour, with Pond's Seedling, Cox's Emperor, as his best dishes. Plums, yellow and green, four dishes, distinct. First, Mr. McIndoe, with clean, well-coloured fruits—the varieties being Jefferson, Green Gage, Bryanston Green Gage, and Magnum Bonum. Plums, purple, four dishes, distinct.—First, Mr. Blick, with very fine fruits of Grand Duke, Monarch, Kirk's, and Prince Englebert. The two first-named varieties are not so much grown as their merits deserve. As shown here the fruits were large and shapely, of a rich purple colour and dense bloom. Second, Mr. Neighbour. Third, Mr. McIndoe. Figs, two dishes, distinct. Six were put up. Mr. Ward was a good first with fine Brunswick and White Marseilles. Second, Mr. Evans, gardener to J. Stewart Hodgson, Esq., Lythe Hall, Haslemere, with Brown Turkey and White Marseilles. Third, Mr. Goodacre.

APPLES.

A class was provided for a collection of twelve kinds, six to be dessert and the remainder kitchen, all the fruits to be orchard-house grown. The first prize was easily won by Messrs. Geo. Bunyard & Co., nurserymen, Maidstone, Kent, with grand specimens of the following varieties—Belle Pontoise, Lady Henniker, Emperor Alexander, of enormous size; Warner's King, Stone's Apple, Bismarck, large, and splendidly coloured; Washington, Worcester Pearmain, extra good; Okera, Lady Sudeley, Cox's Pomona, and Ecklinville. Second, Mr. McIndoe, with large fruits, but in most cases they were deficient in

colour. The varieties were—Emperor Alexander, Bismarck, Striped Beaufin, Peasgood's Nonesuch, Washington, Gascoigne's Seedling, Maiden's Blush, Worcester Pearmain, Queen Caroline, Duchess of Gloucester, Greenup's Pippin, and Grand Duke Constantine. Messrs. G. Bunyard and Co. were again first for three dishes of ripe Apples, distinct, with Worcester Pearmain, Cellini, and Washington, in first-class condition. Second, Mr. McIndoe, with smaller but well-ripened examples of Worcester Pearmain, Queen Caroline, and Ribston Pippin.

PEARS.

For a collection of ten kinds, distinct, Mr. C. Blick was first with a very fine well ripened lot, which included several dishes of exceptional merit. The varieties were Souvenir du Congrès, Pitmaston Duchess, Magnate, Princess, Doyenné du Comice, Durondeau, Fondante d'Automne, and Doyenné Boussoch, Brockworth Park, and Williams' Bon Chrétien. Mr. McIndoe was second; many of his dishes, though large, were rather green, the ripest among them being Clapp's Favourite and Brockworth Park. For three dishes of ripe fruits Mr. McIndoe secured the premier award with Souvenir du Congrès, Williams' Bon Chrétien, and Louise Bonne of Jersey, all well ripened. Second, Mr. Divers, with Clapp's Favourite, Souvenir du Congrès, and Doyenné du Comice. Third, Messrs. G. Bunyard & Co., with large fruits scarcely ripe.

TOMATOES.

These were well shown, but not so extensively as is generally the case at the Crystal Palace. For a collection of six distinct kinds Mr. C. J. Waite, gardener to the Hon. Col. Talbot, Glenhurst, Esher, was a good first, showing the following varieties in very fine condition:—Reading Perfection, Waite's Glenhurst Favourite, Laing's Pedigree, Carter's Perfection, and Carter's Sandwich Island. Second, Mr. E. Rider, Northumberland Nursery, Orpington, Kent, with smaller but clean even samples. Third, Mr. Wells, florist, Earlswood, Redhill. Four lots were staged.

SPECIAL PRIZES.

Messrs. James Carter & Co. offered prizes for the best basket of vegetables, in six distinct varieties. The first prize was won by Mr. Waite, with produce grown and staged in his usual good style. He showed Carter's Extra Early Autumn Giant Cauliflower, Carter's Perfection Tomato, Golden Noble Onion, Holborn Abundance Potato, Telephone Pea, and Carter's Scarlet Perfection Carrot. Mr. F. A. Becket, Colehatch Farm, Amersham, Bucks, was a good second, showing similar varieties. The same firm offered prizes for the best six fruits of Carter's Blenheim Orange Tomato.

Mr. H. Deverill, Seed Merchant, Banbury, also offered prizes for the best six fruits of Waite's Glenhurst Favourite Tomato. Mr. Waite was first with a fine dish, Mr. Beckett second, and Mr. Palmer, Thames Ditton, third.

NON-COMPETING CLASSES.

Messrs. G. Bunyard & Co. of Maidstone, Kent, staged a grand collection of Apples in forty-five varieties. One magnificent specimen of Peasgood's Nonesuch weighed 1 lb. 10 ozs. Messrs. J. Cheal of Crawley, Sussex, also staged a large collection of good quality, and Messrs. J. Peed & Sons, The Nurseries, Mitcham Road, Streatham, exhibited a similar collection, several dishes being particularly fine. James Carter and Co. of High Holborn put up some fine blooms of the rare and beautiful *Clanthus Dampieri*, which were much admired. The same firm staged several varieties of Tomatoes, including Conference, Blenheim Orange, Sandwich Island, and Market Favourite.

MISCELLANEOUS.

A few classes for cut flowers, came in at the end of those for fruit. Handsome prizes were offered for a collection of cut spikes of Gladioli, not more than 100, and in not less than thirty-six varieties. The only exhibitors were Messrs. J. Burrell & Co., Howe House Nurseries, Cambridge, who had very fine lot of ninety-six spikes, the major part of them grandly developed. The leading varieties were *Iolanthe*, *Pyramide*, *Rayon d'Or*, *Conquérant*, *Imperial Couronne*, *Africaine*, *Grand Rouge*, Mrs. Lindsell, *Amitié*, *Atlas*, *Baroness Burdett Coutts*, *Celestine*, *Dalila*, *Crépuscule*, *Minos*, *Mascarille*, *Meyerbeer*, *Cygné*, and *The Mikado*. With eighteen spikes, shown by amateurs, Mr. E. B. Lindsell, Hitchin, was first, and the Rev. H. H. Dombrain, Westwell Vicarage, Ashford, second. The latter had a few of the finest spikes, but he had some of the weakest. The leading varieties were *Mont Blanc*, *Celestine*, *Dalila*, *Snowdon*, *Carnation*, *Grand Rouge*, *Mons. A. Brongniart*, *Atlas*, *Baroness Burdett Coutts*, *Conquérant*, *Rossini*, *Bicolor*, *Horace Vernet*, and *Flamboyant*. There was no competitor in the class for twelve spikes.

Very good quilled German Asters came from Mr. Sidney Cooper, Hamlet, Chippenham, who was first with twenty-four, and Mr. John Walker, nurseryman, Thame, who was second. The best twenty-four French Asters, all good blooms of the *Paeony* flowered type, were from Messrs. J. Saltmarsh & Son, nurserymen, Chelmsford; Mr. John Walker being second with the same type. But the season has not been a good one for Asters. Hollyhocks were poor, and a third prize only was awarded in the class for twenty-four blooms. In that for twelve Mr. Thomas Hobbs, Lower Easton, Bristol, was the only exhibitor, and was awarded first prize.

Stove and greenhouse cut flowers made a very fine feature, especially as the collections were unlimited. Mr. J. Prewett, Swiss Nursery, Hammersmith, was first with a large collection, in which Orchids played a very important part. Mr. P. Blair, gardener to His Grace the Duke

of Sutherland, Trentham, was second, having some fine Orchids also; and Mr. Gibson, gardener to T. T. B. Atkins, Esq., Halstead Place, Sevenoaks, third.

Plants included collections of early flowering Chrysanthemums in pots, and here Messrs. J. Laing & Sons, Stanstead Park Nursery, Forest Hill, were first with a bold and striking group. Messrs. Reid & Borne-man, nurserymen, Sydenham, were second with a remarkably good group also; and Mr. N. Davis, nurseryman, Camberwell, third. Mr. G. Saunders, gardener to W. H. White, Esq., Charlwood Park, Crawley, was first with six Cockscombs. Mr. R. Spinke, Victoria Road, Horley, was second.

Miscellaneous collections, which greatly helped the display, were furnished by Messrs. J. Laing & Sons, who had an imposing mass of valuable double and single Begonias in pots, relieved by Ferns. Messrs. W. Paul & Son, nurserymen, Waltham Cross, Roses, hardy shrubs, &c.; Messrs. Paul & Son, Old Nurseries, Cheshunt, a good collection of hardy flowers; Mr. Alexander Lister, florist, Rothesay, a wonderful collection of cut blooms of Show and Fancy Pansies, Marigolds African and French, the latter in fine double and single forms, &c.; Mr. W. Innes, florist, Rothesay, Pansies, Marigolds, Antirrhinums, &c.; and Mr. E. F. Such, florist, Maidenhead, hardy cut flowers in variety. Messrs. Cannell and Sons, Swanley, also had a handsome collection of Dahlias and other cut flowers.

First-class certificates of merit were awarded to Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, for *Papaver orientale* var. *semi-plena*, with brilliant vermilion flowers; and to the Rev. H. H. Dombrain for *Gladiolus Mont Blanc*, a very fine light, almost a white variety of high quality.

HORTICULTURAL SHOWS.

BATH.—SEPTEMBER 3RD AND 4TH.

THERE have been a good many fine shows held at Bath of late years, but it was generally conceded that none has ever equalled that under notice. Not only were the entries far in excess of any previous numbers—many of the competitors hailing from a considerable distance all round—but the quality and extent of the display was much in advance of what has ever before been seen at the Bath September Show. No less than five tents, three of these being of the largest size, filled to overflowing, and in addition there was a capital open-air display of vegetables, and which travellers by the Great Western Railway had a brief and free view. The Committee, with Messrs. Pearson and Jefferies as Honorary Secretaries, having had long experience in all matters pertaining to holding flower shows, always arrange everything in a very satisfactory manner to all concerned, and fine though dull weather being experienced a capital and most appreciative attendance of visitors resulted.

PLANTS.

Fuchsias are always a feature at these September Shows, and nowhere else probably are so many fine specimens brought together. The greater portion of the plants shown were perfect pyramids, ranging from 6 feet to 9 feet in height, and all were freely flowered and much fresher than usual. The best nine varieties were shown by Mr. G. Tucker, gardener to Major W. P. Clark, Trowbridge, the collection including such fine exhibition sorts as *Lye's Favourite*, *Charming*, *Bountiful*, *T. King*, *B. R. Pearson*, *Doel's Favourite*, *Arabella*, and *Mrs. Rundell*. Mr. G. Snell, gardener to Mrs. Counsell, Bath, was a close second, his plants, though not so large as those in the premier collection, being more perfectly furnished over the rims of the pots. Mr. J. Lye, the veteran grower and raiser, was third, he also having fine well-flowered specimens. The competition with six varieties was equally good, Mr. A. Hawkins, gardener to Mrs. Jolly, Bath, being well first with very freely flowered specimens 8 feet to 9 feet in height of *Mrs. Rundell*, *Charming*, *Charming*, *Doel's Favourite*, *Arabella*, and *Final*. Mr. Weston, gardener to the Rev. C. C. Layard, was a good second; and Mr. Pocock third. The first prize for four Fuchsias was rightly awarded to Mr. H. Marchant, gardener to J. Murch, Esq., Bath; Mr. C. Adlam, gardener to Mrs. Woodroffe, Bath, being second. There were also classes for single specimens of different shades of colour, these attracting many fine specimens.

Specimen stove and greenhouse plants were more largely represented than usual and, interspersed among the Fuchsias, well filled the largest tent. Mr. J. Cypher, Cheltenham, had no difficulty in carrying off the principal prizes, his plants giving but little signs of having done so much good work this season. The principal class was that for eighteen plants, six to be in bloom; and in this Mr. Cypher showed very fine *Crotons*, *Palms*, and other valuable specimens. The second prize was awarded to Mr. Curry, gardener to Colonel Pepper, Salisbury, who had good, fine-foliaged plants, but was decidedly weak with flowering plants. Mr. J. F. Mould, Pewsey, and Mr. Wills, gardener to Mrs. Pearce, Southampton, were placed equal thirds, with which awards neither party were satisfied. Mr. Curry was first for eight fine-foliaged plants, Mr. Wills being second, and Mr. Jones, gardener to Mrs. Doherty, Bath third, there being, however, nothing particularly noteworthy in the class. Mr. Cypher was easily first for six flowering plants, having *Allamanda nobilis*, *Ixora Duffii*, *I. Pilgrimi*, *Franciscea calycina* major, *Bougainvillea glabra*, and *Erica Eweriana* in excellent condition. Mr. G. Tucker was second with neatly trained, well-flowered plants, and Mr. Jones third. With three plants Mr. J. Hiscox, gardener E. R. Rodway, Esq., Trowbridge, was first, having creditable specimens of *Dipladenia*

amabilis, *Allamanda Hendersoni*, and *Dipladenia boliviensis*. Mr. Wills was second. Heaths were well shown by Messrs. Cypher, J. F. Mould, and Mr. Wills, who took the principal prizes in two classes. There were also classes provided for single specimen flowering and fine-foliaged plants, in all of which there was good competition.

The display of Orchids was unusually good. With six plants Mr. Cypher was well first, his collection consisting of *Vanda Sanderiana* with one spike bearing eight fine flowers, *Aerides Sanderiana*, *Cattleya Gaskelliana*, *Dendrobium formosum*, *Odontoglossum Harryanum*, and a fine pan of *Odontoglossum grande*. The second prize was awarded to Mr. G. Pymm, gardener to Mrs. Gouldsmith, Trowbridge, his best being *Cattleya Loddigesi* and *Cattleya Leopoldi*. In the class for a new or rare plant the first prize went to Mr. C. Richman, gardener to G. L. Palmer, Esq., for a fairly good form of the beautiful *Cattleya Dowiana*, Mr. Cypher being second for the quaintly flowering *Catasetum Bungei* with a spike bearing nine flowers.

Mr. Richman was well first for *Gloxinias*, and Mr. Tucker second; and the first named was also first for six double and six single flowering *Tuberous Begonias*, showing exceptionally well flowered plants of five varieties in both instances. Mr. W. Clifford was a good second in each class. The competition in the various classes for *Pelargoniums* was very keen. The best six *Zonals* were shown by Mr. H. Marchant, these having very good foliage and extra fine trusses of bloom, and the varieties were *Aurora Borealis*, *Dr. Aiton*, *Queen of the Whites*, *John Fellowes*, *Lizzie Brooks*, and *Henry Jacoby*. Messrs. Cray of Frome, G. Tucker, Weston, E. B. Titley, and S. Fottle were the other leading prizewinners with *Pelargoniums*. Mr. J. Lye was first for *Petunias*, Messrs. Cooling & Sons and T. Truckle, gardener to T. Carr, Esq., for *Liliums*, Messrs. Cooling & Sons for *Cockscombs*, and Mrs. Woodroffe for *Coleus*; the competition being good in every instance.

Ferns were extensively and well shown. The best twelve exotic varieties were staged by Mr. G. Tucker, who had medium-sized very healthy specimens of *Lomaria gigantea*, *Asplenium nidus avis*, *Davallia hemiptera*, *Cheilanthes hirta*, *Gymnogramma chrysophylla*, *Dicksonia antarctica*, *Gymnogramma peruviana argyrophylla*, *Adiantum cuneatum*, *Cheilanthes elegans*, *Gymnogramma sulphurea*, *Adiantum concinnum latum*, *Adiantum gracillimum*. Mr. Truckle was a good second, and Mr. H. Jones third. There were five competitors with a group of plants arranged for effect, to occupy a space not less than 100 square feet, good taste being displayed in each instance. Mr. Cypher, however, was well first, the very choice materials available, coupled with skilful and elegant grouping, not being equalled before at any of the Bath shows. Mr. Wills was second, and Mr. Curry third, both putting up very light and pretty groups.

CUT FLOWERS.

These were a great feature, the display being remarkably good both in point of quantity and quality. The first prize for thirty-six *Gladioli* was awarded to Mr. G. J. Walters, Messrs. John Jefferies & Son being a close second, and Mr. R. H. Poynter, Taunton, third. For twelve spikes Mr. S. Tottle was first, Dr. Budd, Bath, second, and Mr. A. A. Walters third. Mr. G. Humphries, Chippenham, staged grand blooms in the class for twenty-four Dahlias, the pick of these being *Nellie Cramond*, Vice President, *Agnes T. Hobbs*, Mrs. Gladstone, H. Keith, H. Turner, Major Clark, Mrs. Dodds, Maud Fellows, Miss Cannell, H. Walton, W. Rawlings, G. Barnes, and Ovid. Messrs. Heath & Son, Cheltenham, were second, and Mr. J. Nation third. The best twelve varieties were shown by Mr. T. Hodds, Bristol, who had good blooms of *J. Henshaw*, Mrs. D. Saunders, Mrs. Harris, Dr. Reilly, J. Standish, Alice Emily, W. Garrett, C. Wyatt, J. T. West, W. Jackson, Goldfinder, and H. Walton. Mr. S. Cooper was second, and Mr. S. Price third. Mr. Humphries was first for nine Fancy Dahlias, having perfect blooms of *J. Hopper*, *Hercules*, *Prince Henry*, Major Bartlett, *Rebecca*, Mrs. Saunders, H. Eckford, and Mrs. Halls. Mr. S. Cooper, Chippenham, was second, and Messrs. Heath & Son third. The prizewinners in a good class of single Dahlias were Messrs. T. Carr, Cooling & Sons, and A. A. Walters.

There was quite a grand show of *Roses* shown in three classes. Messrs. John Jefferies & Son were first for twenty-four varieties, their stands including fine fresh examples of *J. Laing*, *Duke of Teck*, *Lady Mary Fitzwilliam*, *Madame E. Verdier*, *Madame I. Perreire*, *Camille Bernardin*, *Mrs. Jowitt*, and *Beauty of Waltham*. Mr. A. H. Gray was very strong, especially in *Teas*, and by some judges would have been first. His best were *Marie Baumann*, *Francisca Kruger*, *Princess of Wales*, *Etoile de Lyon*, *Innocente Pirola*, C. Mermet, *Edith Gifford*, and *Madame Lambert*. Messrs. Cooling & Sons were a good third. With twelve varieties Mr. A. H. Gray took the lead, having fine rich blooms of *Grace Darling*, *François Michelin*, *Duchess of Bedford*, *La France*, *Dupuy Jamain*, *Pride of Waltham*, *Countess of Oxford*, *Mdlle. Marie Verdier*, *Mons. E. Y. Teas*, *The Bride*, A. K. Williams, and *Comtesse de Serenyi*. Messrs. Perkins & Sons were a good second, and Dr. Budd third. A beautiful lot of *Teas* were shown. With twelve distinct varieties Mr. A. H. Gray was well first, his stand comprising *Anna Ollivier*, *Madame Lambert*, *Maréchal Niel*, *Princess of Wales*, *Edith Gifford*, *The Bride*, *Alba rosea*, C. Mermet, *Madame Hippolyte Jamain*, *Francisca Kruger*, *Marie Van Houtte*, and *Comtesse de Nadaillac* in excellent condition. Dr. Budd was a creditable second, and Messrs. J. Jefferies & Son third.

Verbenas were well shown by Messrs. S. Walters and Weston; *Geraniums* by Messrs. J. Mattock (Oxford) and S. Tredwell; *German Asters* by Messrs. W. J. Jones and A. Langley; *French Asters* by Messrs. G. Garaway and W. J. Jones; *Hollyhocks* by Messrs. T. Hobbs and J. Newman; *Phloxes* by Messrs. F. Hooper and R. Palmer, the prizes

being awarded in the order named, and the competition very keen in each instance. The best collection of choice cut flowers was shown by Mr. W. James, Mr. H. Pocock being second; while with a collection of herbaceous flowers Messrs. Cooling & Son took the lead, the second prize going to Mr. A. A. Walters. The vase of flowers for table ornament, which gained Mr. J. Cypher the first prize in a large class, was nearly perfection; and the same may be said of the first prize bouquet sent by Messrs. Perkins & Son. Nearly the whole of one side of a large tent was taken up with the exhibits of collections of wild flowers, and bouquets and vases of the same with grasses, and this, probably, was one of the best displays of the sort ever seen.

FRUIT.

One large tent was not sufficient to hold the various exhibits of house-grown and hardy fruit, and judging by what was shown, Apples especially are both plentiful and superior in quality. There were five collections of twelve dishes of fruit staged, the first prize going to Mr. W. Nash, gardener to the Duke of Beaufort, Badminton, who had perfect bunches of Black Alicante and good Muscat of Alexandria Grapes, Blenheim Orange and Countess Melons, Bellegarde and Violet Hative Peaches, Lord Napier and Pine Apple Nectarines, Moorpark Apricots, Jefferson Plums, Brown Turkey Figs, and Williams' Bon Chrétien Pears, all shown in his well-known excellent style. Mr. A. Miller, gardener to W. H. Long, Esq., M.P., Trowbridge, was a close second; and Mr. J. Cray, Frome, third.

The competition with eight bunches of Grapes in four varieties was also better than usual, five lots being staged. Mr. W. Taylor, gardener to Alderman Chaffin, Bath, set up perfect bunches of Muscat of Alexandria, Alicante, Madresfield Court, and Alnwick Seedling, and was first; but he had a formidable opponent in Mr. J. Gibson, gardener to Earl Cowley, Draycot Manor, Chippenham, who lost ground somewhat with his Muscat of Alexandria, but had very good bunches of Black Hamburgh, Madresfield Court, and Alnwick Seedling, and was second. The third prize went to Mr. A. Miller for creditable Grapes. Mr. W. Nash was well first with three very superior bunches of Black Hamburgh, the second prize going to Mr. Gibson for only slightly inferior bunches, and Mr. J. Lysaght third. There were thirteen of the former up, and twelve competed in the any other black class. In the latter instance Mr. Taylor was first with beautifully grown Alnwick Seedling, Mr. Pocock being second with good Alnwick, these being preferred to well-grown Madresfield Court. Mr. Taylor was an easy first in the class for Muscat of Alexandria, his bunches having very fine well-coloured berries; Mr. Gibson was a good second. In the any other white class Mr. J. Atwell, gardener to J. B. Brain, Esq., Stoke Bishop, was first with well-coloured Buckland Sweetwater, Mr. W. Dawes being second with the same variety. Mr. Pocock was the most successful exhibitor in the local class for Grapes.

Melons were not very plentiful, nor on the whole very good. Mr. W. Iggulden, Frome, was first with a green-flesh variety, staging a handsome fruit of Hero of Lockinge. Mr. H. Chislett, gardener to E. T. D. Foxcroft, Esq., was second. In the scarlet-flesh class Mr. W. Allen was first with Scarlet Invincible, and Mr. Marchant second. Peaches and Nectarines are always judged in a queer fashion at Bath, more weight being attached to flavour than to any other points. With nine fruit of the former Mr. W. Coombs, gardener to J. W. Langdon, Esq., was first for a good dish of Walburton Admirable, Mr. Pymm being second. For six fruit Mr. W. J. Atkins, gardener to S. G. Morrell, Esq., was first with Royal Charlotte, the second prize going to Mr. Iggulden for good Barrington. No mistake, however, was made in the class for nine Nectarines, Mr. Pymm winning with grand fruit of Pine Apple. Mr. J. Doe, gardener to H. W. Tugwell, Esq., Bath, being second for a good dish of the same variety. The best six Nectarines, variety Victoria, were shown by Miss Marriott, Mr. W. Tyle-Payne being second. There were a fairly large number of competitors in the classes for Plums, Figs, Cherries, and Nuts, and a capital lot of Apples and Pears were shown. Mr. W. Bannister, gardener to H. St. Vincent Ames, Esq., Clifton, was first for three dishes of Pears, having handsome fruit of Jargonelle, Souvenir de Congrès and Pitmaston Duchess. Mr. J. Goddard was second. With a single dish in a large class Mr. T. Herne was first with Williams' Bon Chrétien, and Mr. G. Horsell second. The best three dishes of dessert Apples, these consisting of Irish Peach, Worcester Pearmain, and Early Margaret, were shown by Mr. R. Palmer, Mr. J. Rogers being second. In the corresponding class for culinary varieties Mr. E. H. Caterer, gardener to T. Arnold, Esq., was first with grand dishes of Lane's Prince Albert, Warner's King, and Ecklinville, and Mr. A. Miller a close second. There were no less than thirty-five good dishes staged in the class for a single culinary variety. Mr. E. Reeves winning first position with a perfect dozen of Emperor Alexander, Mr. H. Short following with fine Warner's King.

VEGETABLES.

These again were extensively shown, both in collections and single dishes, most of the leading west of England growers competing. In the class for a collection of twelve varieties, Mr. T. Wilkins, gardener to Lady Theodora Guest, was well first, having remarkably fine dishes of Ailsa Craig Onion, Giant White Celery, New Intermediate Carrot, Prodigy Pea, Satisfaction Potato, Perfection Beet, Lockie's Perfection Cucumber, Lyon Leek, Autumn Giant Cauliflower, Perfection Tomato, Student Parsnip, and Ne Plus Ultra Runner Bean. Mr. G. H. Copp, gardener to W. E. S. Erle-Drax, Esq., Sherborne, was a good second, and Mr. A. Miller third. Six competed for Messrs. Sutton's prizes offered for six varieties of vegetables, Mr. G. H. Copp winning the first position

with excellent examples of Sutton's King of the Cauliflowers, Sutton's Seedling Potato, Duke of Albany Pea, Sutton's Intermediate Carrot, and Perfection Tomato. Mr. T. Wilkins was second, and Mr. J. Lye third, both having good samples. The same number competed for Messrs. Webb's prizes, and in this instance Mr. W. Evry, Bath, was first, his collection consisting of Webb's Giant White Runner Bean, Duke of Albany Pea, Telegraph Cucumber, Autumn Giant Cauliflower, Perfection Tomato, and Potatoes. Mr. T. Wilkins was second, and Mr. G. H. Copp third. Sixteen competed with a single dish of Tomatoes, a fine lot of fruit being shown. Mr. H. Hopkins, gardener to H. Prodders, Esq., was first with Sutton's Perfection; Mr. T. Jones second, and Mr. F. Case third.

NON-COMPETITIVE EXHIBITS.

Perhaps the most attractive of these, as far as gardeners and fruit growers were concerned, was the extensive exhibit of Apple trees in pots and a collection of Apples in separate dishes, these being contributed by Messrs. G. Cooling & Sons, Bath. The trees were carrying heavy crops of large handsome fruit, the best being Emperor Alexander, New Hawthornden, King of the Pippins, Cellini Pippin, Worcester Pearmain, Warner's King, Stirling Castle, Pott's Seedling, and Prince Albert. There were also fine dishes of Warner's King, Ecklinville Seedling, Blenheim Orange, Lord Suffield, Cox's Pomona, King of the Pippins, Beauty of Bath, and Reinette de Canada.

In other tents Messrs. Cooling & Sons had large stands of Roses, Gaillardias, Pentstemon, Sunflowers, and Salpiglossis. Messrs. R. Veitch & Son, Exeter, also arranged an attractive bank, composed largely of herbaceous plants in a cut state, Gloxinias, Dahlias, Gaillardias, Carnations, including a fine stand of the popular Germania, and a variety of other flowers. Messrs. Garaway & Co., Clifton, contributed a good selection of Cactus and show Dahlias, and other flowers. Mr. Eckford had a stand of Sweet Peas of his own raising; and Mr. J. Mattock a large box of Tea Roses in bunches.

WARWICKSHIRE.

It is customary at the annual Exhibition of the above Society to hold a Flower Show, and a remarkably good one was arranged last week in the Jephson Gardens at Leamington, which is immediately contiguous to the site of the Agricultural Show; and several tents were filled with exhibits, including one entirely filled by contributions from Mr. F. Perkins, Regent Nurseries, Leamington. This included plants of many kinds, cut flowers, fruits, and vegetables, and it had all the appearance of a small flower show in itself. As is usual, the Agricultural Exhibition appeared to overshadow in importance that formed by the plants, flowers, &c., still a great many persons attended it, the weather being on the whole favourable.

PLANTS.

Specimen plants were a good feature, and Mr. Finch, gardener to J. Marriott, Esq., Coventry, staged in most of the leading classes, and was very successful. He was first with ten stove and greenhouse plants in bloom, having fine examples of Lapageria rosea and alba, Ixoras Duffi and Fraseri; Ericas Marnockiana, Turnbulli, Thompsoni; Stephanotis floribunda, Dipladenia amabilis, and Phœnocomia prolifera Barnesi. Mr. J. Morris, Stoke, near Coventry, was second, his leading plants being Dipladenia amabilis, Stephanotis floribunda, and Lapageria alba. In the class for six specimens Mr. Finch was also first, having strong plants of Ericas Irbyana, jasminiflora alba, and Marnockiana; Ixora Williamsi, I. Duffi, and Lapageria alba. Mr. W. A. Mann, Lillington, was second with much smaller plants. Mr. Finch was also first in the class for three flowering and three foliated plants, having, of the former Erica Eweriana, E. Marnockiana, and Ixora amabilis; and of the latter, Kentia Forsteriana, and Crotons Queen Victoria and angustifolium. The name of the winner of the second prize had not been placed on his plants when our report was taken.

Other flowering plants included Fuchsias, which were moderately good, but small; Zonal Pelargoniums, like the Fuchsias, shown in sixes; Begonias, only fairly good, and Gloxinias. So many of the exhibitors' prize cards were not put on until late that we were unable to gather up all the names of the exhibitors.

Foliated plants were shown very finely by Mr. Finch. He had the best ten, which consisted of Crotons Queen Victoria, Morti, and Warreni, Kentias australis and Forsteriana, Cycas revoluta, C. circinalis, and C. species from New Caledonia, Latania borbonica, and Dasyliroton acrotrichum. Mr. Hopkins, gardener to J. D. Barbour, Esq., Leamington, was second with smaller plants of much the same character.

One of the best features were the exotic Ferns, and of these there were some very handsome specimens. Mr. Finch was first with six plants, having finely developed examples of Adiantum farleyense and cultratum, Todea superba, Trichomanes radicans, Davallia Mooreana and D. fijiensis plumosa. Mr. F. Perkins, Regent Street, Leamington, was second with smaller plants of very fine quality, having Adiantums Hendersoni, farleyense, concinnum latum and Veitchi, and Onychium auratum, a very elegant species. There was a class for six British Ferns, but only fair specimens were staged. It would be a great deal better if the term hardy were employed instead of British, as judges sometimes find it very difficult to say what are and what are not British Ferns.

Groups arranged for effect filled a tent. The best decidedly showing the highest artistic taste came from Messrs. T. B. Thompson & Son, nurserymen, Birmingham, though it did not exhibit any novel features

it was yet light and graceful. Mr. Finch was second with a bed of Fern relieved by a few ornamental leaved plants, and of which he appeared to entertain a much higher opinion than the judges. There were classes also for groups of plants for room and hall decoration, and baskets of the same, but they were of an ordinary character. There were several classes for plants by amateurs, but they were generally of moderate quality.

CUT FLOWERS.

A very attractive feature, and especially the class for twenty-four bunches of herbaceous plants. Messrs. Pope & Son, nurserymen, Birmingham, were first, and Mr. F. Perkins second, both with strong and weak bunches, but the balance of quality, which, after all, was not much, laid with the former. Mr. F. Perkins had the best collection of annuals, very pretty bunches of good things; but we were unable to obtain the name of the winner of the second prize. The best stand of twenty-four bunches of stove and greenhouse plants came from Mr. W. R. Mann, a very good lot indeed, representing what is usually shown in such a class. Mr. J. J. Whalley, Kenilworth, was second. Asters were represented by quilled and flat-petalled types, but they all showed the effects of the stormy weather.

The best thirty-six Roses came from the only exhibitors of the same—Messrs. Perkins & Sons of Coventry, a very good lot indeed, the leading varieties being *Mad. Marie Verdier*, *Lady Mary Fitzwilliam*, *Niphetos*, *Ferdinand de Lesseps*, *Mad. J. Laing*, *Duke of Teck*, *Alfred Colomb*, *Marie Van Houtte*, *Charles Lefebvre*, *Ulrich Brunner*, *Dr. Andry*, *The Bride*, *A. K. Williams*, *Rosieriste Jacobs*, &c. They also had the best twenty-four varieties, Messrs. Pope & Son taking the second prize.

Gladioli were shown in collections of twenty-four spikes, but they were not of a character to call for special mention. Zonal Pelargoniums, shown in bunches, were a very fine feature indeed, but we were unable to gather up the names of the successful exhibitors.

Dablias were generally shown too large and coarse, and too much advanced in bloom, the centres being quite gone in several instances. Messrs. Kimberley & Son, nurserymen, Coventry, had decidedly the best twenty-four varieties, and Mr. J. Wood, florist, Derby, was second. The best twelve came from Mr. F. J. Burbury of Kenilworth; the second prize went to Mr. C. Carrington, florist, Derby. There were several classes for cut flowers grown by amateurs, but they contained only ordinary contributions.

Table decorations included the best arranged dinner-table for ten persons with fruits and flowers. There were but two competitors; and Miss Perkins, Regent Street, Leamington, was awarded the first prize, Miss L. Perkins, of the same address, being second. The best two bouquets—one a bride's, the other a bridesmaid's—came from Messrs. Pope & Son, Birmingham; and Messrs. Perkins & Son, Coventry, were second, both remarkably good and but little to choose between them. Messrs. Perkins & Son had the best basket of Roses, and Miss Perkins, Leamington, was second. A centrepiece for the dinner table was also shown by amateurs.

FRUIT.

Fairly good and that was all, though the prizes offered seemed likely to tempt a greater display. Mr. Hopkins had the best collection of ten varieties, having *Black Hamburgh* and *Muscat of Alexandria* Grapes, *Royal George* Peaches, *Pitmaston Orange* Nectarines, *Moor Park* Apricots, *Bon Chrétien* Pears, *Figs*, *Cherries*, &c. Second, Mr. W. R. Mann, who had similar varieties of Grapes, very fine *Mr. Gladstone* Peaches, *Elruge* Nectarines, *Apricots*, *Jargonelle* Pears, *Figs*, &c.

The first prize for three bunches of *Black Hamburgh* Grapes was taken by C. J. Lefroy, Esq., Willesbourne, Warwick, and the second prize by Mr. W. R. Mann. Mr. E. F. Flower, Stratford-on-Avon, was first with white Grapes, having very good *Muscat of Alexandria*; Sir R. Moon, Bart., was second with the same. Collections of hardy fruits were shown in baskets, Mr. Hopkins taking the first prize and Miss Perry, Leamington, the second.

Some very good Plums were shown. The best three dishes were from Miss Perry, who had capital fruits of *Washington*, *Victoria*, and *Diamond*, the second prize going to Mr. Hopkins for *Kirke's Victoria* and *Cox's Emperor*, also very good.

Mr. Kitley, the lessee of Warwick Castle Gardens, had the best three dishes of Apples, staging very fine fruit of *Stirling Castle*, *Ecklinville*, and *Warner's King*. Mr. W. R. Mann was awarded the second prize for *Lord Suffield*, *Warner's King*, and *Emperor Alexander*. Mr. Hopkins had the three best dishes of Pears, staging excellent examples of *Bon Chrétien*, *Jargonelle*, and *Souvenir de Congrès*. Messrs. Kimberley & Son received the second prize for *Louise Bonne of Jersey*, *Jargonelle*, and *Bon Chrétien*. Hardy fruits of the bush type, such as *Currants* and *Gooseberries*, were well shown also.

VEGETABLES.

These were good and numerous, but baskets of vegetables arranged for effect appeared to be a novel feature. The Judges wisely awarded the prizes to the best examples. Some very good Potatoes were shown, but there appeared to be a tendency, in more than one instance, to show the same variety under different names. The best six dishes came from Mr. C. J. Lefroy, who had *The Dean*, *Reading Russet*, *Snowdrop*, *Woodstock Kidney*, *Prizetaker*, and *Schoolmaster*. Mr. F. J. Burbury was second with a very good set of six dishes. Vegetables were also shown by amateurs and cottagers.



FRUIT FORCING.

VINES.—*Houses of Ripe Grapes.*—Those that contain the thick-skinned Grapes will require, whether they are to be kept on the Vines or in the Grape room, liberal ventilation, with gentle fire heat for the maintenance of a certain ventilation of air. With the Grapes ripe, gradually reduce the strong laterals as the days decline in length, and keep the foliage healthy by means of a proper supply of moisture on the walls, paths, and floors sufficiently early in the day to admit of the atmosphere becoming light and buoyant before nightfall. *Black Hamburgh* and other thin-skinned black Grapes are liable to have the colour taken out of them by hanging under powerful sun. Some netting should be drawn over the roof lights to prevent it. *Hamburghs* and *Foster's Seedling* will bear as much air moisture almost as the thick-skinned varieties, provided it be not stagnant, and it is very necessary for the foliage, which must be kept healthy. *Madresfield Court* do not endure moisture to anything like the same extent as *Hamburghs*, and must be treated accordingly. It, however, loses colour quite as badly, and must be shielded from the direct rays of the sun. *Muscats* hanging on Vines with the roots in outside borders will keep a long time, protecting the roots from heavy rains. A covering of dry fern, shutters, or tarpaulin answer, but glazed lights are better, placing in a sloping position for throwing off the wet, as they admit sun heat, and retain it for warming the borders. If the foliage is not sufficient for the protection of the tender skins of the berries, some light shading will be necessary, particularly where the houses are glazed with large panes of glass. A single thickness of pilchard netting is sufficient, or hexagon netting may be used, which effectually excludes wasps. It is hardly possible to keep *Muscats* well without a gentle warmth in the pipes, in order to keep the air in motion, for when the air is still moisture sometimes condenses on the berries, and they are then liable to spot. It should be accompanied with a little ventilation.

Lifting Vines.—This and relaying the roots in fresh compost near the surface should be proceeded with as the Vines are cleared of their crops. The sooner it is done after the wood is mature and the buds plumped the better, but it must not be attempted whilst there is doubt of that being effected. Yet it is always best to perform work of this kind whilst the leaves are upon the Vines. Good loam with some brick and lime rubbish, and a liberal admixture of crushed bones and charcoal, will meet all requirements in respect of compost. See to the drainage, make it satisfactory, and follow on with turf grass side downwards, or a 3-inch layer of lime rubbish freed of all laths or other pieces of wood. Keep the roots near the surface, always bearing in mind that a narrow border well filled with roots is preferable to a large mass of soil at the onset, as the roots can be more easily excited and fed at the proper time. The Grapes, too, in a border well in hand invariably set and colour better. Always choose dry weather for making the border, and be careful to have the compost in good working order, neither too wet or too dry, but moderately moist. Cover it when finished with a thin layer of stable litter freed of the coarse strawy portions, and keep the interior of the house close and rather moist until the foliage shows signs of fresh root action having set in, then ventilate freely, and keep the air dry. In all cases, especially in cold localities, the Vines should have inside as well as outside borders, as the roots can then be lifted and relaid in either of the borders without injury to the following year's crop. If the border in which the roots are lifted be an outside one it should be well protected with leaves before frost, covering with a little litter to prevent the leaves blowing about.

PINES.—Young Pine plants always present at this season, under liberal and proper treatment, a luxuriant appearance. This arises from the beneficial effects of natural means so important in cultivation. Those influences being now on the wane greater care will be necessary in the management to prevent the growth becoming soft, and measures should be taken to consolidate it by a drier atmosphere and artificial heat. Syringing will only be needed occasionally, and it should be done early in the afternoon of bright days. Water must only be given when absolutely necessary, then afford a plentiful supply of weak liquid manure in a tepid state. The bottom heat should be kept steady at 85°, or between 80° and 90°, and pay particular attention to the ventilation, which is important at this period of the year. Plants in a luxuriant condition should have air at 80°, above which ventilate freely, especially on warm sunny days, and close the house for the day at 80°. The night temperature should be maintained at 65°, allowing 70° to 75° by day artificially.

Fruiting plants should be kept together in a suitable structure for finishing the fruit well. Isolated they cannot always be furnished with their needful requirements. Plants that are intended for starting into fruit early in the year should be selected from those that were started last spring, and be arranged not later than the end of this month, where they can rest for six weeks. Those on which the fruit is swelling should be encouraged with a liberal amount of heat and moisture, keeping the night temperature from 70° to 75°, and that in the daytime from 80° to 90°, closing the house at 85° with sun heat.

STRAWBERRIES IN POTS.—In the earliest plants the crowns are becoming plump, sufficiently so, at least, for the detection of plants that will not be available for early forcing, and which should be removed at once, even those about which there is a suspicion of being barren, making good the deficiency from surplus stock. These should be given plenty of space and the warmest position. Worms and runners are troublesome, also weeds. Lime water will expel worms, but the drainage must be seen to afterwards and put right, putting down more ashes to prevent others entering the pots. Runners and weeds must be promptly removed. The pots in all cases should be wide enough apart to allow of the sun and air having free access to the foliage. The crowns, which are numerous in some varieties, particularly Vicomtesse Hericart de Thury, should be reduced to the central or strongest one, not deferring it until they have attained to a considerable size, but as soon as they can be taken hold of with the finger and thumb and lifted clean out of the socket. This will concentrate all the vigour in the main crown; those will afford strong flower spikes, and then by selecting the largest and best formed flowers a crop of fruit will be ensured large and creditable to the grower. Any late runners may yet be potted, and with good attention they will be serviceable for late work in 5-inch pots, and may afford very good fruit.

THE FLOWER GARDEN.

Propagating Pelargoniums.—It is not yet too late to take and root the requisite quantity of Zonal Pelargonium cuttings, but if longer delayed the result may prove disappointing. Cuttings this season are very soft and sappy, and more than ordinary pains must be taken with them or there will be many failures. After they are duly cut to a joint and freely trimmed all ought to be laid in the full sunshine or in an open place to flag. In this manner much superfluous sap will be removed and the wounds partially healed over. Nor ought water to be given for several days after the cuttings are inserted, only enough being given at any time to prevent their shrivelling badly. At this late date none should be left in the open exposed to all weathers, a dry cool staging or shelves in a house or pit being the best place for these newly inserted cuttings.

Pots versus Boxes.—Where extra large quantities of Pelargoniums are still bedded out the ordinary boxes must be largely used for their storage. If carefully watered and kept in dry airy houses the percentage of losses is usually small; but boxes are by no means the best receptacles in all instances where the house room is either limited or of an unsuitable character. It is surprising what a quantity can be packed away on a few shelves, swinging or otherwise, if the cuttings are inserted somewhat thickly in 3-inch or rather larger pots. Each small pot will hold five or six cuttings, and these being potted singly in the spring make fine plants by the time they are wanted for the beds. The more delicate variegated varieties frequently damp off extensively in boxes, but they keep well in pots. If, therefore, boxes must be used place the common green-leaved varieties in these and place the bicolors and tricolors in either pans or pots. In any case only common sandy soil should be used, the boxes especially being well drained, while all ought to be firmly fixed in the soil.

Tuberous Begonias.—The beds of these have quite eclipsed the Pelargoniums this season, and in many cases they would pay well if protected from early frosts. A light framework and either mats, scrim canvas, or cotton blinds would ward off a moderately severe frost and prolong the display considerably. Sturdy isolated plants could be potted, and would flower for a time in a conservatory or greenhouse. As far as keeping the roots is concerned, there is no necessity to lift the plants before frosts have crippled the tops, only very severe cold ever reaching or injuring the tubers. Mixed beds are very effective, but masses of one colour are even more so; and for this reason it is advisable to place a label bearing the description of colour and habit to each plant, and next season it will be a simple matter to group the different colours. The erect flowering forms are the most effective in flower beds, and during the weeding-out of inferior forms the preference might well be given to those with bold erect blooms. Cuttings inserted in either boxes or the open ground, similarly to Zonal Pelargoniums, will eventually die down, but not till most of them have formed tubers at their base.

Verbenas.—On the whole these have been a failure, the rains dashing the blooms as fast as they opened. Nor have the more delicate named varieties formed much healthy growth, good cuttings being scarce. Hard young shoots rarely strike freely, and even if they can be rooted they seldom grow vigorously. Select succulent young flowerless shoots, shorten to the third joint, and insert rather thickly in 5-inch pots, water-in, and place them in a frame over gentle hotbed. They must be kept rather close and shaded till well rooted, when the plants ought to be stored on shelves in a cool house. Old plants can seldom be potted with advantage, and flowering or insect-infested shoots are useless for propagating purposes.

Lobelias.—These have revelled in the dull showery weather, and were never gayer for so many weeks together. Nowadays seedlings are so good as regards evenness of growth, colour, and floriferousness that there is little need to propagate from cuttings or division. Nor do old plants that have been flowering all the summer succeed in pots. Cuttings are also scarce unless the plants have been prevented flowering. If they can be procured they may be rooted, and the plants wintered much as advised in the case of Verbenas.

Heliotropes, Petunias, and Ageratums.—All have done well this season, the first and last named especially so. Cuttings do not strike particularly well. The surest way of having a stock of

either is to keep a number of young plants growing strongly in pots all the summer, these flowering freely in the autumn, and produce cuttings in abundance from the ripened growth the following spring. This precaution not having been taken in the case of Heliotropes, the attempt should be made to root some cuttings in gentle heat, and a few old plants ought also to be potted before frost injures them. Petunias and Ageratums may be treated in a similar manner, though good strains of both can be had from seeds sown next spring.

Tender Bedding Plants.—Healthy or not starved plants of Coleases, Alternantheras, and Iresines kept all through the summer in pots are better for storing for stock purposes than any that can be potted up, but if these are not available then must cuttings be inserted and old plants lifted before any more frosts are felt. Soft cuttings of either of the kinds named usually strike freely in a brisk heat, while if plants are lifted not much rich garden soil should be left about the roots, or otherwise it will become sour during the winter. A light compost ought to be used, and good drainage given. The shelves of stoves or forcing houses are the best positions for wintering these plants, and rather small pots are better for them than either pans or boxes.

Protecting Masses of Flower.—Many good and serviceable border plants are flowering exceptionally well this season, plenty of moisture at the roots evidently suiting them. Masses of Stocks, Asters, Zinnias, Marigolds, Gaillardias, and the taller-growing Japanese Anemones, herbaceous Sunflowers, Pyrethrum uliginosum, Heleniums, late Gladioli, and any other showy plants might be preserved from frosts and heavy rains without much trouble, and their usefulness greatly prolonged with the aid of a few stakes, benders, rods, and either mats or good blinds. Everything should be kept in readiness for covering the plants, and be put on before frosts cripple them.

PLANT HOUSES.

Gloxinias.—There is no difficulty in having these in flower throughout the year. Plants that flowered early and have just started again into growth should be shook out and repotted. Introduce another batch of plants into a temperature of 60°. It is a good plan to shake them out and place the tubers amongst leaf soil in pans or boxes until they commence growing and rooting. Do not dry off too quickly plants that have flowered.

Coleus.—Cuttings should be rooted in quantity. Select shoots with large bold foliage, and insert them singly in small pots. Small, well furnished, highly coloured plants are invaluable for table and other forms of decoration. Root also a good batch of cuttings in 5 and 6-inch pots for stock purposes, and keep them where the temperature ranges 60°. These, if allowed to grow without pinching, will yield valuable cuttings for rooting in small pots at intervals of a month.

Medinilla magnifica.—If grown in the stove, where shading has been employed, it should now be removed to a cooler and drier atmosphere, and fully exposed to the sun. It will be safe in a night temperature of 55°. Do not diminish the supply of water at the root, and the syringe should be used freely once a day. Thrips are very troublesome, and once they are established they soon destroy the fine foliage of this plant.

Epiphyllums.—These should have completed their growth; expose them fully to the sun in a cool dry atmosphere. Do not keep them dry at their roots. Water carefully, but do not allow them to suffer by an insufficient supply. Plants that have not done growing should be kept fully exposed to the sun in a temperature of 60°. Where the Pereskia has been grown strong for stocks the shoots may be cut into lengths of 9 inches or a foot, the eyes removed, and then inserted singly in small pots. Portions of Epiphyllums may be secured to the stocks as soon as they are inserted, and by the time they are rooted the stock and scion will have become united.

Stephanotis.—Plants that flowered early have completed their growth, and should be placed where the temperature does not fall below 50°. Admit plenty of air during the day and maintain a dry atmosphere about the plant. The principal object now should be to harden and ripen the wood thoroughly, then abundance of flowers another season may be anticipated.

Poinsettias.—If not removed from cold frames these should be removed without delay to some light structure where the temperature will not fall below 55° to 60°. Ventilate freely during the day to prevent the plants again starting into growth. This must be avoided, or else their brilliant bracts will be small in comparison to what they should be.

Caladiums.—It is not safe to keep these much longer in a cool conservatory. They should be removed to a temperature of 60° and allowed to go gradually to rest. Do not dry them off too quickly, or else the tubers will rot; gradually decrease the supply of water, and allow them to die off naturally. The tubers will then remain sound for another year.

Adiantum cuneatum.—Seedlings that are well established in 3-inch pots will if placed into 5 or 6-inch at once continue to grow and yield fronds for cutting throughout the winter. Place the plants in a temperature of 60° and grow them fully exposed to the sun. Use for a compost leaf mould and loam in equal proportions, and add a liberal quantity of sand. Lime rubbish broken up moderately fine and incorporated with the soil is also very suitable for these plants. Plants from which all the best fronds have been removed may be cut over, rested for a short time in a cool place, and then started into growth by placing them in the temperature advised for young plants.

THE BEE-KEEPER.

APIARIAN NOTES.

THE WEATHER.

THE weather has been extremely variable since the 29th August, as it has been all the season. It may perhaps be interesting to some to know that on the morning of the 31st August there was a severe frost. Potatoes were frozen to the ground, but singular to say the Heather was uninjured, and the bees throughout the brighter part of the day worked well. The following morning first brought us sleet and heavy showers of hail, a change of temperature to something like summer heat followed for three days, with heavy downpours of rain. The last two days were the best the bees have had this season, an evident rise in the weight of the hives having taken place, and the 5th September was the finest day of the season. With a further continuance of fair weather for a few days the bees may make up their weight wonderfully, and may enable me to lay before your readers the results of the season.

Appearances are sometimes misleading, but of six varieties the Carniolians are the most promising. Ours are a wonder to all who see them, and are a wide contrast to other varieties and to those in standard sized hives which have been preserved by dribble feeding. Not one of that sort I have witnessed but has drawn their brood long since and are unlikely now to be able to gather much surplus, but the results will prove. The largest yields will be had from the full sized hives as is always the case, there being always plenty of bees and room to store honey in the body of the hive without the necessity of having to build comb in the first place, which in a season like the present is out of the question with weak hives.

POLLEN—BEES FLYING.

I have been much interested at seeing the bees break the rule of gathering pollen from one sort of flower or grass only. I have witnessed them frequently work alternately on different species of both flowers and Grasses.

Some years since I gave my observations and opinion upon this subject to the effect that bees were guided to their hive by possessing a knowledge of the points of the compass, and not that of any land or other mark. Following that article there appeared in a contemporary an article on the same subject as original! I have for some time past been giving the subject more thought and attention, and my opinion is that magnetic influence is the principal guide of the bee, both outside and inside the hive, and that the eyes are of most use to the insect in her flights in the field, and that their antennæ regulate every movement.

THE AGE OF THE BEE.

We have had this subject so often under consideration that it is almost useless to say a word more upon it to refute the erroneous impression that bees live about six weeks only, were it not to point out to bee-keepers that these strong colonies are the result of having two queens' progeny living at one time, not by art, but by a natural act of the bees changing their queens without swarming about midsummer. The bees are still further preserved by being kept much within-doors through stress of weather, and being well found in stores the season throughout, being exactly in a similar condition to that which we have so long advised to be done by careful manipulations, and introducing young fertile queens at the proper time.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

Charles Turner, Royal Nurseries, Slough.—*Catalogue of Bulbs.*
Dobbie & Co., Rothesay, Scotland.—*Autumn Catalogue.*
Barr & Son, King Street, Covent Garden.—*Catalogue of Bulbs and Daffodils.*

TO CORRESPONDENTS

* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Begonias (*Lord B.*).—You will find the information required on page 217 of this issue.

Seedling Carnations (*W. L. C.*).—The Carnation would never possess any commercial value, as there are many varieties in cultivation superior to the one of which you sent a flower.

Dahlias (*R. S.*).—It is probable that the tubers were mixed, as, though cultivation has a tendency to cause a change in the flowers such as you describe, it is not likely to be effected in one year.

Cheap Heating Apparatus (*S. S.*).—You could effect your object by means of any of the cheap appliances advertised in the columns of this journal. Remove some of the foliage and expose the fruits to the sun as much as possible; this will help more than artificial heat.

Azalea Bed (*W.*).—The best soil for Azaleas is unquestionably peat, but we have had them thriving admirably in loam on the sandstone and freestone formations, and quite luxuriantly in sawdust from loose boxes in which hunters have "run" during the summer, mixed with an equal proportion of turfy loam. We have no doubt of cocoa-nut fibre refuse being an excellent material for mixing with loam for the growth of Azaleas and Rhododendrons, having a sixth of sand added, and put in 18 inches deep and made quite firm. We have also seen them luxuriating in a shallow silicious loam overlying sand, with a good mulching each year of cowdung. The condition of your plants shows the soil to be unsuitable, and we should take it out and have 18 inches depth of peat, which is best taken from a moor where Heather grows, the top 3 or 4 inches being best, and with a goodly admixture of particles of white sand. This chopped moderately small will grow them perfectly. The brown spongy peat used for Orchids is not suitable for Azaleas. We should not cut the plants down—at least, not until they had become well established in the peat bed, and then you may cut away the stunted growths, so as to encourage stronger growths from the base, and so insure larger trusses of bloom. Hardy Azaleas in variety are not so common as they deserve to be in gardens.

Arranging Conservatory (*P. R.*).—The walls will look very tame covered with Ivy. We suggest that the most conspicuous be covered with ornamental rockwork to some little height from the floor, and above that have rockwork pockets for Ferns, ornamental leaved Begonias, Tradescantias, and similar plants, and cover the smooth portions of the walls with *Ficus repens* and var. *minima*. It is very close growing, forming a capital background to the Ferns, &c., and is better indoors than Ivy. Vines would not succeed in such house, nor are Roses suitable unless they are trained well up to the glass and have plenty of light. We should have a border along the front inside, and plant *Lapageria rosea* and *L. alba*. They are charming when seen together, and would grow admirably in such position, training them up the front and over the roof from 6 to 9 inches from the glass. Camellias would do well, and Oranges may be grown in pots; but it would be best to rely chiefly on Palms and other foliage plants, such as *Indiarubber*, *Aspidistra lurida variegata*, *Dracena congesta*, *D. australis*, *Aralia Sieboldi* and var. *variegata*, *Phormium Veitchi*, and *P. Colensoi*. For hanging baskets you could not have anything better than Ferns, such as *Nephrolepis Bausei*, *Davallia fijiensis major*, *D. Mariesi*, and *Platy-cerium alcorni majus*.

Alternanthera Failures (*G. B.*).—*Alternantheras* are essentially heat-loving plants, and the present season has been most unfavourable to their growth, failures being general. They rarely form much fresh strong growth after being planted, but the stunted shoots produced are invariably the most highly coloured. The best effect is produced by putting out quite small plants very thickly in the first instance. Strong plants may look well for a few days, but when the broad or fully developed leaves fall, which they very soon do, there is nothing to take their place, for some time at any rate, and a failure may be the result. Not only are *Alternantheras* very much smaller than when first put

out, but Coleus and Iresines are not much better. Alternantheras cannot well be dispensed with, there being no substitute sufficiently dwarf and richly coloured. *A. paronychioides aurca* is the most delicate, and scarcely so bright yellow in colour as a good strain of Golden Pyrethrum. *A. versicolor* is more robust, and with us is looking fairly well. *A. paronychioides magnifica* is a great improvement on the old form, and does not often fail. *A. amabilis latifolia* is richly coloured, and one of the best for carpet bedding. You appear to have well prepared the beds, and in all probability if smaller plants are put out more thickly, or as close together as they need be at the right time next season, there will be no failure. In any case it is advisable to keep a few plants in boxes ready for any emergency. These, if needed, can be dibbled among those first planted, or they can be kept as stock plants for propagating purposes.

Culture of *Kalosanthus coccinea* (C. R. M.).—If all the shoots are cut down the plant will not flower next year, but will be fine the year after, and on this account cultivators usually have two sets of plants; but it often happens that plants with only two shoots will produce but one head of bloom, and then the second shoot will be sure to follow the year after, and thus a plant may be made to flower every year. If this plant with two shoots offers to flower on both instead of one, and you wish the plant to flower every year, you must forego the pleasure of having both shoots to flower the first season. In that case, as soon as you can perceive the flower-buds in the spring, you must cut down one of the two shoots, and let the other one flower. The lower down the shoot is cut the better. If there is only an inch or two of it left, it is sure to produce three times the number of young shoots that will be necessary to retain. If you select three of the best placed, these will be enough for a plant so young; therefore, instead of two flower-heads we have only one of them, and three others coming up to flower next season. As soon as the single truss of flowers begins to fade, this flowering shoot must be cut down close likewise, and from it succession shoots will be obtained, so that in a large old specimen there are many flowering shoots and succession ones growing on at the same time; and as soon as the plants are done flowering the shoots which have borne the flowers are cut back to different lengths, according to the size or shape the plant is intended to be grown. Every portion of the old shoots cut off will make cuttings; but the best cuttings are obtained from the top ends of young vigorous shoots; they will root in a greenhouse, window, or frame. Abundance of air, strong sunlight, and plenty of water during their two months of active growth, but little during the rest of the summer and autumn, and scarcely any in winter, are the leading principles in their culture.

Propagating *Clematis Jackmani* (S. T.).—These plants can be increased by cuttings of nearly half-ripened wood in the spring of the year, if inserted in sandy soil and placed until they are rooted under bell-glasses in a temperature of 50° to 55°. This, however, is not a certain method, and layering is never practised by the trade. The best, quickest, and safest method is to propagate them by means of grafting. Strong roots from any other kind must be procured during the winter and kept moist in cocoa-nut fibre refuse, sand, or any similar material until wood is ready for the scions in spring. Plants from which the wood is taken are generally wintered in cold frames and brought forward in them by keeping the frames moderately close. The young wood should be used for scions, say after it has attained 3 or 4 feet in length, and before it becomes half ripened towards the base of the shoots. Each scion should be cut off just above a pair of eyes, and the wood between the joints left to each scion should be cut wedge shape. The strong roots should be cut clean across the top, then split down the centre and the scion fitted in between. The bark of the scion and the root must be fitted together on one side and then bound into position by matting or worsted, the first being the best. One pair of eyes is sufficient for each scion. After this the grafted roots should be potted singly in 3-inch pots in sandy loam. A gentle watering should be given, and the pots plunged in a propagating case where the bottom heat ranges about 75°, and the top heat 55° to 60°. Attention must be paid to dewing them over daily, preventing the sun from striking upon them, and lifting the lights of the case. Clematises are easy to graft, but unless care is taken with them for the first few days or a week afterwards they will all go off. Union soon takes place between the stock and scion, and if they can only be kept from damping until they have reached that stage they will be perfectly safe afterwards.

Names of Insects (G. H., Loughborough).—The caterpillar taken off the Apple is of the Eyed Hawk Moth (*Smerinthus ocellatus*), nearly full grown. Its more usual food is the Willow and Poplar, but it sometimes occurs upon the Apple, though not in sufficient numbers to do any appreciable harm to fruit or foliage. The dark slug-like insect is a juvenile specimen of the Sawfly grub (*Tenthredo adumbrata*), which does much harm to Pears in September, and which has been more than once described and figured in this Journal. A kindred species of slug-worm infests the Cherry.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (S.).—1, Dumelow's Seedling; 2, Peasgood's Nonesuch; 3, Blenheim Pippin; 4, Cox's Orange Pippin. (W. T.).—1, Mère de Ménage; 2, Lord Grosvenor; 3, Warner's King. (Essex).—The Apples

are probably local varieties. We do not know them, and they are of inferior quality.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens should be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (M. E.).—*Montbretia Pottsi*. (B. R.).—1, *Chrysanthemum maximum*; 2, *Aster Novæ-Angliæ*; 3, *Aster Novi-Belgi*; 4, *Lilium longiflorum*; 5, *Adiantum pedatum*.

COVENT GARDEN MARKET.—SEPTEMBER 10TH.

MARKET quiet, with no alteration.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, $\frac{1}{2}$ sieve	3	6	to	6	0	Lemons, case	10	0	to 15 0
" Nova Scotia and						Melons, each	1	0	2 0
" Canada, per barrel ..	0	0				Oranges, per 100 ..	4	0	9 0
" Tasmanian, p. case ..	0	0				Peaches, dozen	1	0	8 0
Grapes, per lb.	0	9				Plums $\frac{1}{2}$ sieve	0	0	0 0
Kentish Filberts, 100 lbs.	50	0				St. Michael Pines, each..	2	0	6 0
" Cobs	55	0				Strawberries, per lb. ..	0	0	0 0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes, dozen	0	0	to	0	0	Mushrooms, punnet ..	1	6	to 2 0
Asparagus, bundle	0	0				Mustard & Cress, punnet	0	2	0 0
Beans, Kidney, per lb. ..	0	3				Onions, bushel	3	0	4 0
Beet, Red, dozen	1	0				Parsley, dozen bunches	2	0	3 0
Brussels Sprouts, $\frac{1}{2}$ sieve	0	0				Parsnips, dozen	1	0	0 0
Cabbage, dozen	1	6				Potatoes, per cwt.	3	0	4 0
Carrots, bunch	0	4				" New, per lb.	0	0	0 0
Cauliflowers, dozen	2	0				Rhubarb, bundle	0	2	0 0
Celery, bundle	1	0				Salsafy, bundle	1	0	1 6
Coleworts, doz. bunches ..	2	0				Scorzoner, bundle	1	6	0 0
Cucumbers, doz.	2	0				Seakale, per bkt.	0	0	0 0
Endive, dozen	1	0				Shallots, per lb.	0	3	0 0
Herbs, bunch	0	2				Spinach, bushel	1	0	2 0
Leeks, bunch	0	2				Tomatoes, per lb.	0	3	0 6
Lettuce, dozen	0	9				Turnips, bunch	0	4	0 0

CUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	2	0	to	4	0	Lilium, various, 12 blms.	0	6	to 1 0
Asters, per bunch, French	0	9				" longiflorum, 12 blms.	2	0	4 0
" English, 12 bunches.	3	0				Marguerites, 12 bunches	2	0	6 0
Bouvardias, bunch	0	6				Maidenhair Fern, dozen			
Carnations, 12 bunches ..	4	0				bunches	4	0	9 0
" 12 blooms	1	0				Mignonette, 12 bunches..	1	0	3 0
Calceolaria, doz. bunches	3	0				Pansies, dozen bunches ..	1	0	2 0
Chrysanthemum, 12 blms.	1	0				Pelargoniums, 12 trusses	0	9	1 0
" 12 bunches	4	0				" scarlet, 12 bunches	3	0	6 0
Cornflower, doz. bunches	1	6				Pinks (various), doz. bchs.	3	0	6 0
Dahlias, dozen bunches ..	2	0				Primula (double) 12 sprays	0	6	1 0
Eschscholtzia, 12 bunches	0	0				Roses (indoor), dozen ..	0	6	1 6
Eucharis, dozen	3	0				" Moss (Eng.), 12 bch.	0	0	0 0
Forget-me-not, doz. bch.	1	6				" Red (Eng.), 12 bch.	2	0	6 0
Gardenias, 12 blooms ..	2	0				" Red, 12 blooms	1	0	2 0
Gladiolus, 12 bunches ..	4	0				" Tea, white, dozen ..	0	6	2 0
Gypsophila, per bunch, Fr.	1	0				" Yellow	2	0	4 0
Iris, various, dozen bunches	0	0				Stocks, dozen bunches ..	3	0	6 0
Lapageria, 12 blooms ..	2	0				Sweet Peas, 12 bunches	1	6	3 0
Lavender, dozen bunches	3	0				Tuberose, 12 blooms ..	0	3	0 9

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Aralia Sieboldi, dozen ..	6	0	to	12	0	Geraniums Scarlet, p. doz.	2	0	to 6 0
Arbor Vitæ (golden) doz.	6	0				Heliotrope, per doz. ..	4	0	6 0
Asters, dozen pots	3	0				Hydrangea, doz. pots ..	9	0	18 0
Calceolaria, per doz. ..	4	0				Lilium lancifolium, doz.	9	0	18 0
Chrysanthemum, per doz.	6	0				" longiflorum, doz. 12	0	24	0
Climbing Plants, various,						Lily of the Valley, 12 pots	0	0	0 0
dozen pots	4	0				Lobelia, per doz.	0	0	0 0
Cyclamen, per dozen ..	0	0				Marguerite Daisy, dozen	6	0	12 0
Deutzia, 12 pots	0	0				Mignonette, per dozen ..	4	0	6 0
Dracena terminalis, doz.	24	0				Musk, per dozen	0	0	0 0
" viridis, dozen	12	0				Myrtles, dozen	6	0	12 0
Epiphyllum, per dozen ..	0	0				Nasturtiums, dozen pots	0	0	0 0
Erica, Cavendishi, per pt.	0	0				Palms, in var., each ..	2	6	21 0
" various, dozen	12	0				Pelargoniums, per doz. ..	6	0	12 0
Enonymus, var., dozen ..	6	0				Rhodanthe, per dozen ..	4	0	6 0
Evergreens, in var., dozen	6	0				Saxifraga pyramidalis,			
Ferns, in variety, dozen..	4	0				per dozen	0	0	0 0
Ficus elastica, each ..	1	6				Spiræa, 12 pots	0	0	0 0
Foliage plants, var., each	2	0				Stocks, per doz.	0	0	0 0
Fuchsia, per doz.	4	0				Tropæolums, various, per			
Geraniums, Ivy, per doz.	3	0				dozen	0	0	0 0



AGRICULTURAL EXPERIMENTS IN SUSSEX.

OFTEN have we called attention in these articles to the important work being done by the Sussex Association for the Improve-

ment of Agriculture, and we have now to record other results, which were clearly explained by Professor Jamieson at the annual visit of the members to the experimental stations on the 21st ult.

Not unimportant were his preliminary remarks about the size of the experimental plots. The end and aim of the experiments is precise information, and this for some time appeared to be impossible of attainment. The learned Professor's experiments with land were begun some fifteen years ago in Aberdeenshire, and they were subsequently extended to Sussex and elsewhere, and he told how at the outset quarter of an acre plots were tried; the results were so contradictory that the size of the plots was gradually reduced, till the present size of 1-1000th of an acre was arrived at. This was eight years ago, and it has been retained ever since with most satisfactory results, to which the plan of thoroughly mixing the soil of each plot has much contributed. He told how in France Professor Grandean has adopted plots very similar in size, as also has Dr. Peterman in Belgium; and Dr. Voltmann who has been over from Germany to inspect the experimental stations of this country, gives his unqualified approval of the Sussex stations, which is highly satisfactory, as we have reason to regard German scientists as our leaders in this great work.

Turning to the plots we saw how admirably the stronger-growing Grasses hold their own in weedy young pasture. Rye Grass did not bear the test at all well, for it appeared to have gradually been overpowered by weeds; but Cocksfoot has gone on improving year by year, and we have no doubt that eventually it will be cultivated separately, just as it is in New Zealand, and just as Rye Grass is here. Cocksfoot has a remarkable future, for even those who object to the great prominence given it never attempt to deny that it is most nutritious and productive. Of Rye Grass we had another valuable lesson in the importance of seed selection and careful cultivation, both which tell materially upon bulk of crop. But perhaps the most remarkable development of plant and bulk of yield was seen in a plot sown with the strong-growing Grasses at the rate of 14½ lbs. of seed per acre, and at a cost of 7s. 10d. Nothing could be more satisfactory, and equally heavy crops of the same Grasses have been obtained at the trial station in Aberdeenshire.

The elaborate and costly mixtures generally used for new permanent pasture are calculated to meet all requirements of grazing and haymaking, and are so far desirable; but it is obvious that when hay, silage, and cattle grazing are only required, not only may a very considerable saving in cost of seed be effected, but a more satisfactory result obtained by the use of stronger Grasses only. There should, of course, be a fair proportion of Clover in all pasture of a permanent character, and Dr. Fream's recent trials of old pasture show beyond a doubt how very generally Perennial White Clover predominates in the best old pasture.

Probably nine farmers out of ten would object to the breaking up of an old pasture in view of obtaining a better by cultivation, and in East Anglia we doubt not that the tenth man would join the majority. Now we know many an old pasture that in our opinion is, and always will be inferior, simply because they contain no really good Grasses. They may be made to yield a full crop by means of judicious and persistent manuring, but the practice is not commendable under all circumstances, and it has been shown at the Bridge Farm Station how much better it answers to plough up an old inferior pasture and to re-sow it, the herbage being altogether of a superior character, and in the third year its very great superiority over the plots of old pasture was evident. A light ploughing appears sufficient to give the new plant a sufficient start to thrive and become thoroughly established in the overturned sods of old pasture. The popular plan of sowing seed on old pasture has been tried at the Bridge Farm Station with most unsatisfactory results, no real improvement being perceptible, and we were reminded of the strongly expressed opinion of the manager of a large estate, who once told us how often he had

supplied tenant farmers with seed for pasture renovation against his conviction of its usefulness.

The manure experiments are steadily continued, and they tend now more to emphasise the fact well known to our readers, that the only three essentials are nitrogen, potash, and phosphorus. Even now we occasionally read statements that sulphur, iron, and magnesia are necessary in manure mixtures. Professor Jamieson now says emphatically that to spend money upon either of these things or upon lime as a manure is waste. Lime acts mechanically in the most admirable manner upon all clay soils, and the experiments show its especial value upon heavy land. One important outcome of the manure experiments is that the best form of manure application to pasture is found in annual dressings of quick acting chemical manures. Better than dung, better than heavy expensive dressings of chemicals are they. Well do our readers know this, for have they not been reminded year after year to apply about 2½ cwt. of home mixed mineral and nitrogenous manures to pastures in February?

WORK ON THE HOME FARM.

Gloomy and wet as so much of August was, it gave us a parting smile on the last two days, which were bright enough, and September came in with a hoar frost and clear sky. Brisk and bracing was the air as we drove at early morn through fields still full of uncarted corn, and we are glad to add of corn that has not sprouted, despite an almost daily rainfall. There should be very little Wheat threshed before the new year, for soft corn will be the rule and hard corn fit for grinding the exception this autumn. This should tend to keep the price of Wheat firm, and we hope the price may not induce premature threshing and the inevitable loss which always follows such bad practice.

Though most of the corn has been kept from sprouting by drying winds, yet we have to deplore much discolouration of Barley, which is certain to put up the price of good malting samples, and will probably induce a still greater reduction of the area devoted to Barley culture next year, and a proportionate extension of that of Oats. The extraordinary crop of Beans will prove a boon to heavy land farmers, and will do doubt induce them to sow winter Beans extensively this autumn. New layers, both of Clover and mixed seeds, are exceedingly good and so strong in growth that we have seen some Clover in full bloom, and almost as high as the corn. This should induce caution in carting such corn, as the large quantity of herbage in the sheaves may do harm in the stacks if not well ripened.

We are giving dairy cows a little extra dry food, as the rank growth of herbage on pastures is not so nutritious as usual at this season of the year, and there is a risk of some falling off in quality of the milk. Excessive moisture and a low temperature is liable to cause trouble among the udders of cows that are out constantly on pasture, soreness being especially prevalent in herds on low marsh pasture. During the present month the yards and lodges will all be closely examined and set in order for the coming cold season. October is frequently the most trying month of the year for cattle, owing to the great fall in temperature and heavy rain. We like to be on the safe side, and begin using the yards at night according to the state of the weather. Especial care is taken to have the drainage of every yard in perfect order, so that there may be no risk of cattle having to stand about in water, or litter so sodden that a small puddle is made by every step taken by the cattle.

METEOROLOGICAL OBSERVATIONS.

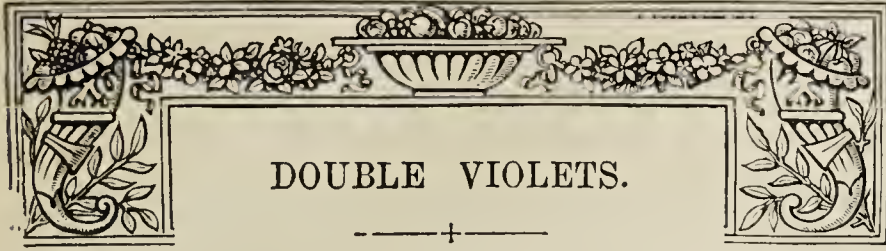
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.						IN THE DAY.				Rain
1890. August and September.	Barome- ter at 32° and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min.	In sun.	On grass.		
Inches.	deg.	deg.	N.W.	deg.	deg.	deg.	deg.	In.			
Sunday 31	30.184	54.5	48.0	N.W.	53.2	63.5	40.4	112.9	38.4	—	
Monday 1	30.343	50.4	48.6	S.E.	56.0	67.1	37.8	106.7	37.1	—	
Tuesday 2	30.253	59.4	54.1	S.E.	56.6	68.1	49.4	108.8	47.2	—	
Wednesday ... 3	30.245	59.6	57.3	S.E.	57.4	70.4	52.4	113.8	51.0	—	
Thursday 4	30.304	59.8	57.7	S.	58.4	70.6	54.9	114.0	53.3	—	
Friday 5	30.373	62.1	59.2	N.E.	59.1	75.8	53.8	115.7	51.0	—	
Saturday 6	30.394	63.8	60.3	N.E.	60.0	75.4	52.1	110.4	49.7	—	
	30.302	58.5	54.9		57.7	70.1	48.7	102.9	45.8	—	

REMARKS.

- 31st.—Fine and generally sunny, but occasionally overcast.
 1st.—Misty early, fine day, not much bright sunshine.
 2nd.—Fine bright morning, cloudy and frequently threatening in afternoon.
 3rd.—A little sun about 11 A.M. and 4 P.M.; otherwise overcast throughout.
 4th.—An almost uniform covering of thin cloud till 3 P.M., then generally bright.
 5th.—Cloudy early; bright warm day.
 6th.—Generally overcast in morning; bright afternoon and evening.
 A week of fine autumn weather, without measurable rain.—G. J. SIMONS.



DOUBLE VIOLETS.

IT would appear almost impossible to overdo the markets with these. Send them where you will, whether to the London florists or the nearest town, they are certain to be welcomed, and on the whole they pay well too. The two most popular varieties, both with growers and those who purchase them, are Marie Louise and the white Comte de Brazzi. There are forms much resembling Marie Louise and others of a deeper shade of colour, or more nearly approaching blue, but it scarcely pays to bother with these. Private gardeners who market their surplus produce, or who have to make a certain sum "by hook or by crook" every season, cannot afford any more than the professed market grower to have any fads, and a great variety of any one thing is a fad which never pays. If a better variety than Marie Louise is forthcoming by all means let it supersede it, and if a better white than Comte Brazzi can be named those who possess it will confer a great favour by stating where it can be obtained.

The ordinary method of growing double Violets may answer very well for ordinary purposes, but those who desire to grow extra fine flowers in the greatest profusion must adopt a better system altogether. What I term the ordinary or most common practice is most faulty as regards the preparation of the young plants. When the cultivator is content to pull the old plants to pieces every April or May, selecting the best rooted pieces and destroying the rest, it more often happens than not that the choice falls on the old crowns, the young rootless runners being discarded. Now, these old plants in time become much stunted and very rarely grow away strongly, or long remain free of red spider, after they are planted out in the open. Young plants behave very differently, these forming strong crowns full of flower buds long before frosty weather sets in, and the foliage being stout and clean, is not nearly so liable to damp off during the winter as are the thin spider-infested leaves on the old stools. There are two ways of raising the requisite number of young plants, both of which are simple enough. At the present time, and also after the plants are transplanted to pits and frames, a number of runners are constantly forming, a few being short with a rootless plantlet attached and the rest mere straggling growths. All the latter ought to be kept closely pinched out, and three or four of the former reserved and pegged down when large enough. Early in September is a good time to do this, though it answers nearly as well to peg them down after the plants are in their winter quarters. All soon push roots into the soil, and during the winter produce a few good flowers. When the time again arrives for dividing and replanting, these young well rooted side plants will be found capital for making a fresh start, the worn out old crowns being thrown away. The other plan of raising a young stock of healthy plants can be practised by those who have neglected to peg down the short runners, and consists merely of taking off the latter directly the flowering period is over and treating them as cuttings. Supposing the old plants are cleared out of a pit the soil can be broken up, levelled, and will then be ready for the cuttings. Dibble these in about 4 inches apart each way, water, shut down the lights, and keep close and shaded till all are rooted. They will strike like weeds, and will soon surpass any old plants or divisions of crowns. Hundreds can be rooted in two or three lights, and many hundreds are wanted if Violets are to be grown profitably.

In most instances the stock of plants for winter flowering is prepared in the open ground, and if the site is fairly cool and well prepared beforehand, a well pulverised soil and plenty of leaf soil rather than much manure being preferable, they will usually do well. This season there has been little or no necessity for waterings over the foliage, but during a dry hot summer they require to be watered frequently, syringed nightly, and mulched with leaf soil, short manure, or grass from the mowing machine. Unless this is done the chances are red spider will be in the ascendant, and a weakly stock of plants be the consequence. A light sprinkling of salt is also beneficial in most cases where the soil is of a light gravelly character. But if this is the most common practice it is not the best. By far the finest plants and the most profitable crop of flowers can be had if the rooted runners are planted direct where they are to remain all the winter. Where the pits are wanted for a variety of other purposes this plan cannot be largely adopted, but in very many instances pits have been erected principally or solely for Violet culture, and there is nothing to prevent these being filled with plants all through the summer. Portable garden frames are also extensively used in Violet culture, and the beds for these could be got ready, the soil being kept in position by the aid of boards, and planted long before the frames are at liberty for enclosing them.

It is of the greatest importance that the Violets be raised well up to the light, air, and what sunshine we get during the winter. There should, therefore, be a fall of 24 inches from the back to the front of either a pit or frame, this angle not being a degree too sharp, and in each and every case the soil ought to be brought up to within 9 inches of the glass. I prefer a solid to a loose foundation, so that there should be little or no settlement during the winter. We are obliged to use a foundation of faggots for the frames, or otherwise moles up root everything. On the wood is placed 2 feet of old hotbed material and rubbish that can be trampled firmly, about 8 inches of good loamy soil, such as comes from Potato, Cucumber, and Melon frames, with an addition of leaf soil and charred garden rubbish, being sufficient for the plants to root in. We merely freshen up the surface of the pits, supplying fresh compost instead of some of the old, the foundation of rubbish and soil not being disturbed. Bottom heat of any kind I do not approve of, nor do Violets long thrive in heated pits. Gentle bottom heat or a little warmth in the pipes may be the means of developing a fairly good supply of flowers during the dullest part of the year, but the market grower cannot afford to weaken his plants for this chance supply. He would be the loser in the end if he did. Bottom heat is certainly not needed to forward the flowers, as well prepared plants commence to bloom early in September, and only during the most unfavourable weather do they remain in a comparatively inactive state. We usually place a few dozen strong plants in 8-inch pots to produce flowers for home use, and these being kept on a shelf in a greenhouse provide us with a serviceable supply at midwinter.

All the plants, wherever prepared, ought to be in their winter quarters before severe frosts are anticipated, these being liable to cripple the foliage badly, damping off being the sure consequence. A dull time in September, or not later than the first week in October, might well be selected for transplanting the best of the plants to the pits and frames, taking care to move all with a fairly large ball of soil about the roots. At the same time remove all superfluous runners and nearly dead leaves, and replant firmly. When plants are abundant inexperienced growers are apt to plant them too thickly. Better by far leave a portion of them in the open to take their chance than to overcrowd and risk wholesale damping off. Our plants at the present time are 10 inches across, and will be kept just clear of each other throughout the greater part of the winter. This rule should be generally observed. It is of the greatest importance that the surface soil be kept open and sweet, and if charred garden soil and rubbish is freely

distributed among the plants, this may prevent a serious spread of a fungoid disease that sometimes clears off the plants wholesale. If the soil either about the roots or in the pits and frames is at all dry, a good watering ought to be given directly after the planting is completed, otherwise this may well be deferred for a few days, or left to the next fall of rain. Keeping the plants rather close for a few days will serve to re-establish them more quickly, but on no account should this coddling be long continued or resorted to any time subsequently. From first to last Violets under glass require abundance of light and air, the lights being drawn clear off whenever the weather is mild and dry, and blocked up in the centre at other times, very frosty weather excepted. When an insufficiency of air is given, if this does not result in damping off, it will yet inevitably lead to an early and strong growth of the foliage, and with this there is certain to be a cessation of blooming. At the same time they must be well protected from severe frosts.

The price for double Violets does not vary greatly. We get nearly or quite as much for them when they are very plentiful, or say in March or April, as we do when fewer are available. What florists like are fully developed blooms with long stems. The bunches usually contain about two dozen blooms, and for every dozen (13) bunches we get on an average 2s. 6d. clear. These bunches, even if not made up afresh, are retailed at not less than 6d. each, and those who take private orders may safely charge that sum for them. Much the same price is given for the white variety, and we find it nearly as floriferous as the Marie Louise. We expect to make about 12s. per light, and this sum is more often exceeded than not. It is a mistake to pick any before they are fully expanded, one fully blown Violet being equal to three half grown, or of the size they are too often gathered. Their own foliage sets them off well, but we cannot afford to weaken the plants by picking them constantly, and use neat or coloured Ivy leaves instead. Packed closely and tightly in either stiff cardboard or light wooden boxes, they can be sent any distance cheaply by post or rail.—I. M. H.

GROWING AND SELLING FRUIT.

THE APPLE.

(Continued from page 198.)

INSECTS AND DISEASES.—The Apple weevil is one of the worst pests the grower has to contend with. The female lays her eggs when the flowers are unfolding. These soon hatch into small maggots, and feed on the flowers and young fruit, eventually changing to the perfect insect, which feeds on the leaves, sometimes appearing in such large numbers as to almost strip the trees bare. In the case of small or young trees handpicking is the best remedy. In large orchards and on older trees this is impossible, but much good may be done by smearing a circle of Stockholm tar and grease round the stem of the tree about 4 inches broad. This will catch a large number of the adult females when they crawl up the stem in the spring to lay their eggs. It should be put on just before the sap begins to rise. Good cultivation and keeping the trees clean and healthy will also assist in keeping down insects.

The grub or maggot of the Codlin Moth also does much damage by eating the young fruit, eventually causing them to drop from the tree, when the maggots leave the Apples and afterwards turn into a chrysalis for the winter, creeping into cracks of the bark, and similar places. This insect is also very difficult to destroy. Picking up the fallen Apples and destroying them before the maggot escapes will kill some, and scrubbing the bark of the trees in winter with water containing 8 ozs. of softsoap to the gallon and a tablespoonful of carbolic acid will destroy a lot in their winter hiding places. Whitewashing the main stem and large branches with hot limewash will also be of benefit, and will cleanse the trees of moss and lichen at the same time. Stockholm tar and grease may also be put round the stems as above advised to catch some of the maggots when they are seeking winter quarters.

American blight often infests old trees very much, and gives the places affected a white woolly appearance. It generally accompanies canker, and though not as a rule the cause of the disease, it must be got rid of before the cankered places will heal up again. Washing with softsoap and carbolic acid as recommended, for the grub of the Codlin Moth will destroy the insects

without injuring the trees. It should be well worked into the crevices with a stiff brush.

Canker.—The cause of this disease is a much-debated point, and possibly it has various causes. If the roots of some kinds of Apples get into a cold and wet soil it will soon appear, while other varieties will not be affected. It is often caused by frost acting on the bark when green and tender, and rupturing the sap vessels. It first appears as a swelling with a few cracks in the bark, which keeps extending until a large piece of the branch becomes bare, and the wood proves to be dead. If the tree is very much affected it is best to grub it up, and to make sure the soil is in good order before planting another one near the place; but if the tree is fairly vigorous it will, perhaps, do better if cut down and grafted with a more hardy sort. Any pieces of canker on the old stems that are left should be thoroughly scrubbed with the softsoap and carbolic acid solution as recommended for the Apple grub, and the rough places should be pared smooth with a sharp knife, then cover the wound with melted pitch, and it will gradually heal.

VARIETIES OF APPLES.—As stated at the commencement of this essay, it is impossible to give a selection of Apples that will suit every part of the country alike, and the intending planter should always seek advice in the locality before he commences planting. The following varieties are the most profitable, and the best croppers in the majority of places, among the older and well tried varieties. Several newer sorts also promise well, but require more testing before too much dependance is placed on them. They are, for this reason, not recommended here. It is a great mistake to grow many varieties with a view to profitable fruit culture; a large quantity of one kind will pay better than a small quantity of many different sorts. But on the other hand it is not advisable to depend solely on one variety, as sometimes one sort will escape the spring frosts, while the crop on another, which may be a little earlier in flowering, will be spoiled. If the plantation is one acre or less in size four kinds will be ample, and if larger two early kinds, two midseason, and two late should be sufficient.

Early Varieties.—Lord Suffield (tender, and apt to canker in some localities, in others one of the best), Keswick Codlin, Lord Grosvenor, Ecklinville, Manks Codlin.

Midseason.—Golden Noble, Winter Hawthornden, Warner's King, King of the Pippins.

Late.—Blenheim Orange, Northern Greening, Wellington, Reinette de Canada, Barnack Beauty.—W. H. DIVERS.

(To be continued.)

HARDY FLOWER NOTES.

WITH the early days of September summer seems to have come at last, and our late flowers are enjoying the bright sunshine denied to their earlier companions. With gardens aglow with Dahlias and annuals of all forms and sizes, with tall spikes of Gladioli uprearing their magnificent flowers in beds and borders, the hardy flower has no light task to present its claims to the spectator's eye. Difficult it may be, but it can be, and is done, and many plants now present themselves for notice.

Good alpine in flower are by no means too plentiful, and one of the choicest which I saw the other day in a good collection was *Cyananthus lobatus*, which formed a beautiful carpet covered with splendid blue and white flowers. It was growing in a rockery in gritty soil, and was a pleasing picture to observe. In the same garden, and in similar soil, was *Pratia angulata*, a New Zealand plant, one of the *Lobelia* family, with white flowers, which are succeeded by purple berries. *P. angulata* is generally considered only half-hardy, but proves quite hardy with Mr. Latimer of Dumfries. It is also grown in the Edinburgh Botanic Garden, where I first saw it, but I could not ascertain whether it was hardy there. Many dwarf Campanulas are still in flower, but among the trailing species *C. isophylla alba* can hardly be surpassed. Like the *Pratia*, this Bellflower bears a doubtful reputation for hardiness, but is quite hardy with us in the south of Scotland if planted in a sunny, sheltered spot. Two neat Polygonums for the rock garden or flower border are *P. Brunonis* and *P. vacciniifolium*, the first of which is the taller and more attractive, but the latter has more of a trailing habit. Both of these are surpassed in brilliancy by the beautiful *P. sphaerostachyon*, which grows about a foot high, and has bright crimson flowers, which bear a strong resemblance to a large Grape Hyacinth, but of a colour we would fain discover among the *Muscari*. From the spikes of these dwarf Polygonums it seems a natural transition to think of the dwarf *Tritomas*, and from them to their taller congeners. *T. MacOwani* is a gem among the genus, growing from 12 to 18 inches in height, with beautiful orange scarlet flowers arranged in a symmetrical manner along the spike. *T. Uvaria nobilis* is a giant among the various species, a large plant I saw the other day having

a magnificent appearance. This would be a grand plant for the wild garden or shrubbery. Some of the others are very good, such as *T. Saundersi*; but one particularly fine one, *T. corallina*, is not hardy here, while a friend informs me that none are hardy in Lanarkshire with him. A very beautiful plant at present in flower is *Eryngium amethystinum*, which is, I think, the choicest of the genus, the whole plant being beautifully tinged with blue, while its habit is exceedingly good.

The pure white *Hyacinthus candicans* is rapidly increasing in favour in this district, and is one of the plants which would be decidedly missed should some untoward event or some fell disease banish it from our gardens. Crocuses and Colchicums are beginning to appear, *Crocus speciosus* being the only one of the former which has as yet expanded its beautiful blossoms; but of the Colchicums we have *C. autumnale*, *C. a. album*, *C. variegatum*, *C. lœtum*, and *C. byzantinum*. It is somewhat curious that the double varieties of *C. autumnale* and *C. byzantinum* are later of flowering than the type. *C. lœtum* and *C. byzantinum* are well worthy of a place. The first is of a very beautiful colour, being more brilliant than *C. autumnale* by reason of a bright rosy tinge in the inside of the flower. *C. byzantinum* is paler in colour, but is an exquisitely formed flower. Although hardly coming in under the heading of these notes I may perhaps be allowed to note that the *Gladioli* have done wonderfully well this season. They looked very bad early in the season, and one would have thought that the disease would have ruined them. They have overcome it wonderfully, and so far as I can see my losses are only two corms of *Pepita*, and some few of *brenchleyensis*. It appears singular that the latter had been left in the ground all winter, while of those planted in spring not one has failed but the two of *Pepita* already mentioned.

This has been a splendid time for the late Phloxes, and many of these are so fine, and there are so many varieties, that one is almost bewildered in the endeavour to make a choice among them. They seem to be again coming into favour, and can be ill spared at this time in the flower borders. The *Rudbeckias*, *Coreopsis*, *Helianthus*, and other yellow composites are exceedingly numerous in this district, where hardy flowers are becoming more appreciated; but there is still a want of front or middle row hardy flowers, and I have been urging upon many the necessity of looking out for these when purchasing flowers.

The Journal of 11th September has just arrived, and I have seen with great interest the notes by "B." on the *Montbretias*. I am a little surprised that *M. Pottsi* does not flower with him. Within the last fortnight I have been in at least half a dozen gardens, where it flowered well in various soils and positions. I believe the secret of flowering the *Montbretias* to be, annually tearing to pieces the clump and replanting a few inches apart. The best clumps of *M. Pottsi* I have seen were growing in a stiffish damp soil, where they were flowering freely.—S. ARNOTT.

GRAPE CULTURE FOR MARKET.

[A paper read by Mr. J. Roberts at the meeting of the British Fruit Growers' Association Brighton, September 11th, 1890.]

THOSE who are old enough to carry their memories back thirty, or even twenty years, will be able to recognise how greatly this fruit has risen in commercial value. At the date I mention you could have counted all the large establishments devoted to the culture of Grapes for market on the fingers of both hands. The prices at which Grapes were then sold retail were quite prohibitive except to the wealthiest classes. It is only reasonable to suppose that large profits resulted to the growers, but when we take into consideration the small structures erected, and the consequent small amount of produce out of them, I suspect the net results were not much better than they are at the present day.

In my younger days I often had the pleasure and privilege of looking over the famous Garston Vineyard, when Mr. Meredith was at the height of his fame as a Grape grower. It was curious to note how Mr. Meredith gradually developed his houses from small lean-to structures with borders bricked in and raised entirely about 3 feet above the ground level to span roofs covering probably a quarter of an acre of ground. This idea has been still further developed during recent years, until at the present we see houses on the ridge-and-furrow principle covering large areas of ground, and capable of producing tons of first-rate Grapes.

Now the question is, Can we improve on this ridge-and-furrow principle in erecting houses for market Grape growing? In a house of this kind your training space is confined entirely to the roof of the house. In erecting a house for Grape growing our object should be to obtain the maximum amount of training space, and where every leaf will be under the influence of direct light. The kind of house I advocate for free-growing kinds such as *Alicante* and *Hamburgs*, is a span-roof—as large as you like—but not less than 100 feet long by 40 or 50 feet wide. The sides must

be carried up in glass not less than 8 feet, nor more than 10 feet high. On these sides I would put a roof at an angle of about 35°. I should then wire the house at each end about 16 inches from the glass, and at distances of 5 feet I would carry wires vertically from the roof to within 3 feet of the ground right through the body of the house from one end to the other. Space must of course be left for a pathway up the centre of house, allowing head room 6 feet high. You can make a house of this description as large as you please, and you can also build it on the ridge-and-furrow principle, but it will be useless for the method of training I am advocating unless the sides are of the height I mentioned, 8 or 10 feet.

The amount of training space gained in a house wired on this principle is nearly threefold over the roof alone, and consequently a treble amount of Grapes. I should only advocate this method of culture for free growing black kinds, as it is not adapted for giving the best results in the culture of Muscats or any choice white kind. Someone may say there would be a deficiency of light under this system of erecting and furnishing a vinery, but you must remember the roof must be kept clear of foliage. All that is wanted to produce good foliage is perpendicular light, and Vine foliage produced 10 feet from the glass is often better and holds its vitality longer than when grown within 2 feet of the glass. With a clear pathway through the centre of the house you will be able to step into each avenue of foliage, and much of the details of culture will be easily attended to without the aid of steps and other hindrances. It will require a large number of Vines to plant a house of this description, and as I have commenced with the structure first, I will go on and describe the planting before I refer to soils and other matters necessary to secure success. In my own practice I have always planted a double set of Vines, every alternate plant being a supernumerary, to be cut out or regrown after it has served the purpose for which it was planted. I plant at 2 feet, which allows the permanent Vine 4 feet of space. For planting purposes I like a well ripened yearling cane that has never been checked in its growth beyond the stopping necessary to keep it short-jointed. I have an objection to planting Vines in a green state owing to the difficulty of getting them ripened at the base or near the border.

In most things a good start is half the battle, but in Vine-growing it is everything, as a young Vine that does not get well away the first season of planting may as well be cast away at once, as they rarely ever make vigorous growth afterwards. The way I deal with the supernumerary Vines is to allow them to have a 10 or 12 feet lead over the permanent Vines. After they have made a growth of from 12 to 16 feet I stop them, and when once stopped I make them burst the end or what would be the dormant winter bud. This strengthens and solidifies them considerably, and at the same time keeps them short-jointed, and brings them into an early ripened condition for fruiting. After the first stopping the process is repeated, when an additional 10 or 12 feet of growth has been made. This stopping may be necessary several times during the season of growth, according to the strength and vigour of the Vines. The permanent Vines are treated in exactly the same manner, except that they get their first stopping when 6 or 8 feet of growth has been made. The object with the latter should be to get a well-ripened cane down to the ground. The second season of growth the supernumerary rods would be cut back to the first stopping in the previous year, which would allow from 12 to 15 feet of young rod for fruiting. The permanent rods are pruned to 3 or 4 feet, according to their strength. All the growths on the supernumeraries is rubbed off up to the point where the permanent Vines catch them in height, which would be about 4 feet from the base. This allows the side growths on the permanent rods to have free development. The same system is pursued each succeeding year—that is, the permanent rods are following the supernumeraries until such time as the latter can be dispensed with altogether; or the process can be repeated by cutting down the supernumeraries and giving them a year's growth, and then allow them to fruit again, cutting away a portion of the lower growths of the permanent Vines to give room for the renewed vigour of the old supernumeraries. By adopting this double method of planting a large house is quickly furnished with bearing wood, and the Vines can be kept in healthy and fruitful condition for many years.

SOILS.

A free and healthy root run is an absolute necessity in the production of decent Grapes. Formerly heavy expenditure was often incurred in forming Vine borders, but where a man has to get a quick profit on the capital invested in his structures and heating; in fact, the scale on which Grapes are produced at the present day forbids a man from taking out half an acre of earth 3 or 4 feet deep to fill it up again at very heavy cost with turfy loam, which in a few years will get into a condition as unfavourable to free root action as the original bed of soil it replaced.

We have no freer rooting plant than the Vine, but like most other plants it has a partiality for some soils over others, and my experience is that the limestone formation is the most natural soil for the Vine. I have for years past noted the Grapes that have been exhibited at our largest shows, and have found that the man who holds his own best and longest is situated on the limestone; in fact, a man who could not produce the finest samples of Grapes on such soils ought to make way for a better man. Very well, if a man is about to embark on a large scale in Grape growing he cannot do better than fix himself on the limestone, and if there is a colliery and railway station near then he has the principal conditions necessary to ensure success. This limestone soil is not an absolute necessity, as we see Vines growing and thriving in the most diverse soils. The question is, how to improve and render what appear unsuitable into suitable soils. Wherever there is found 2 feet or so of decent soil, not too heavy nor too light, we may hope by bringing our knowledge of the laws that govern free root action to bring it from a sterile condition into one abounding in fertility. Many years ago I remember the question asked in the *Journal of Horticulture*, What makes roots grow? and the answer was air. Shortly afterwards a gentleman asked how that could be possible when he had a Vine growing in a solid MacAdam road, and this Vine he described as being in the most robust health. It did not strike him that in such a mixture as MacAdam there could not possibly be any great cohesion, and it was just such a mass as the air would pass through freely, and every stone would be a pasture ground for every fibry root. I have as a cultivator tried to get at the bottom of things, and if I hold one principle more strongly than any other it is that aëration is an absolute necessity to healthy underground growth or root action. It generally takes a few years to get thoroughly exhausted land into a state of fertility, but in the case of a piece of ground intended to be covered with a vinery we must try and do the thing thoroughly at one dressing. First, if I could borrow a dozen or two sheep I would willingly keep them free of cost to have the privilege of folding them for two or three weeks on the piece of ground intended for the Vines. I should then have in readiness sufficient horse manure, fresh and full of vitality—not your spent hotbed manure, which is of no value for this purpose—to make a covering over the whole border 18 inches deep. The next process is to trench the whole border, breaking it up thoroughly, and as the work proceeds I should procure a supply of soot, and also shoddy or rag manure, the latter to be soaked in strong liquid manure, to which has been added some sulphate of ammonia. This shoddy is the finest substitute for turf I know, and is really more lasting. After the whole has been trenched I should make the surface somewhat fine, as the object now is to get the ground to absorb the ammonia and other fertilisers introduced. Where expense is not feared I would add with the above some horn shavings, but I really cannot recommend artificial manures at £20 a ton, when good horse manure can be had at 4s. After the trenching is finished the whole should be allowed to gradually subside before planting.

STARTING THE VINES.

I have already described the structure I approve for growing Grapes for the million, and also the planting. I will now give a few ideas on points I think essential to success. We must start with correct notions on the nature of the Vine. In my practice I have always treated it as a temperate rather than a tropical plant. Heat, light, and moisture are synonymous with motion in the vegetable kingdom, and these are the points to regulate to get a good start. If we apply too great heat we shall get too rapid motion, and if we apply too much moisture we shall get growth without solidity. The temperature I like for starting Vines is 50° night and day. As soon as growth appears 55° is sufficient during the day, and at night 50°. The houses should be freely ventilated from the expansion of the Vine's first leaf, as much of our success depends on the quality and texture of the main leaves. If these are made in an atmosphere overloaded with moisture we need not be surprised if the first scorching day curls them up and red spider finishes them. In the early stages of growth my whole object is devoted to getting all the main leaves up to three or so beyond the bunch of the finest possible substance, and capable of standing sunshine, or volumes of fresh air without injury. This can only be accomplished by very steady forcing, and I am never satisfied if the root action of the Vines has not commenced when they have made about four inches of young growth. Up to this stage the stored up food in the rods is sufficient to supply the wants of the young growths, but if quick root action does not take place you may expect shanking and other evils to follow. When the bunches are visible I remove all secondary growths below the bunch, and this has a great effect in giving additional substance to the permanent leaves, prevents overcrowding of useless growth, and saves much labour in stopping during the growing season. Good colour and every other point, including flavour, depends on the sturdy forma-

tion of the earliest leaves and their preservation intact until the crop is removed from the Vines.

Many people treat Vines as though they were stove plants—never satisfied except they are dosing them with pent-up moisture. The very nature of the tendrils of the Vine tells you that Nature has endowed it with the power to stand storms and tempests of wind with impunity. Many growers are very fond of producing what they call an ammoniacal atmosphere in the vinery. In the early stages of growth I have no objection to this, but the moment the Vines have set it should never be afterwards applied, otherwise you are sure to lose the bloom on your Grapes. Nothing equals the free air of heaven in keeping up the vigour of vegetation, whether it is in the open or under glass. We can assist Nature indoors by adding additional moisture, but I always leave out the ammonia, unless the ventilators are wide open. I have seen many exhibits of good Grapes that were knocked clean out through the polished surface of the berries, telling plainly that too much ammonia had been applied to the atmosphere directly after the setting period.

In training the young growths they should, as far as possible, be brought in a direct horizontal position from the main stem; by doing so you secure a much greater surface of foliage exposed to the light than when they are carried in an oblique direction.

SETTING.

This is the critical stage in the culture of Muscat of Alexandria, and though the flowers of the Vine are insignificant in appearance, there is every reason to suppose that the mass of pollen produced during the flowering period is exhausting to the Vine. All the kinds I have recommended for market culture are very prolific in showing bunches, and the Muscat especially so, often showing as many as five bunches on a single lateral. The first operation is to remove all small and ill-shaped bunches, leaving but one, and that the most shapely, on each lateral. This should be done a week or so before the flowers commence to open, so that the bunches left may get the full benefit of the extra strength that will be thrown into them through the removal of unnecessary bunches. With Muscats a night temperature of 70° is necessary, and during the day the temperature should be from 75° to 80°. In the case of Hamburgs and Alicante a night temperature of 65° will suffice, and the day temperature may rise 10° higher. I ventilate freely early in the morning to get the pollen dry and ripe, and about half-past ten or eleven o'clock, before the stigmas have had time to dry up from the heat of the day, I go carefully over the whole house, and give each bunch a gentle tap to set free the pollen. This operation is repeated every morning for about eight or ten days, and I have never failed to secure a satisfactory "set" by this means. After this operation the house may be damped without injury to the setting process, but all superfluous moisture should be expelled before nightfall.

THINNING.

Thinning is an operation that requires doing with a bold hand. I do not approve of doing a job twice, so I thin the first time to stand the season. It is necessary to have an idea what your Vines are capable of doing, but if you are sure they are in good root action then thin them freely, as the reward will be extra fine berries and much less exhaustion of the Vines than if you allowed them to get near the stoning period before the second thinning took place. There is one point in thinning Grapes intended for market, and that is leave the shoulders of the bunches pretty full, so as to hide the footstalks as much as possible. The advantage of this will be found when you come to send them to market, as a fine even surface of berries will be the result. My favourite liquid manure is composed of blood manure and soot, with a change occasionally out of the farmyard tank. The blood manure is very quick in its action, and will swell up the berries to a great size. A couple of waterings of weak doses of sulphate of ammonia may be applied during the growing season, but the house must on no account be closed for several hours after the watering, otherwise not only the bloom on your berries but the foliage may get damaged.

PRUNING.

This is a simple operation, and if your Vines are young and in good condition they may safely be cut in to one eye from the stem; but if Vines are old and enfeebled with many years' cropping, then it will be advisable to leave an extra eye to ensure a good show of fruit. Before the final pruning a partial pruning should take place a month or two after the fruit has been cut from the Vines. This partial pruning is of much value in concentrating the forces into and filling up the eyes required for the next year's crop. When I was an exhibitor of Grapes I was often struck from year to year how I invariably went to some particular lateral for my exhibit. These laterals had been cut off early in the previous season, and the

long time the few eyes left after removing the shoot and bunch had to fill and plump showed plainly that a rather severe shortening back was highly desirable, and resulted in larger and more shapely bunches the following season.

SHANKING.

There are so many causes for this that I cannot in the limits of this paper enter into them. But there is one cause, and I think it is responsible for more shanking than any other. It is too rapid forcing in the earliest stage of development. As I said before, the man will be freest from shanking who can, when his Vines have made from 3 to 4 inches of growth, feel comfortable from the knowledge that he has got root-action on the move, and here the great advantages possessed by an aerated border come in, as you can with much less time and patience get a start in root growth in an open border than in a border too close and adhesive. I am conscious of many interesting points in Grape growing unnoticed in this paper, but as I wished to direct attention to what I consider the most essential points I hope I shall at least have set you thinking, and also criticising my remarks if they differ from your own ideas and experiences.

VARIETIES FOR MARKET.

Muscat of Alexandria must be placed first as a market Grape. The price realised for well grown samples of this Grape rule high at all seasons of the year. Some of the best growers of this Grape send them to market on boards, and with the same care as if they were intended for exhibition at a horticultural show. Young beginners at market Grape growing should, if inexperienced, not start in their first efforts with this variety. It requires a high temperature compared with most varieties and much care during the setting period.

The next most popular market Grape is Black Hamburgh. It is so free under all conditions and so accommodating in submitting to forcing at all seasons that it is the Grape for giving a supply of fruit from March to November. The enormous quantities of this Grape that come into Covent Garden show many varying qualities. Good, well swelled, and coloured examples carefully packed always fetch fair prices.

Next to the Black Hamburgh I place Alicante as a market Grape—in fact, it has some advantages over the Hamburgh, especially to the retailer of fruit, as it keeps in presentable condition after being cut much longer than the Hamburgh. The great fault of the Hamburgh for retail work is the rapidity with which the stem and shoulder stalks of the bunches dry up. Alicante is coming back to be as popular as ever with growers, and I predict that it will yet drive Gros Colman clean out of the London shops and markets. You need not trouble about any other Grapes beyond the three I have mentioned, as you may with these three kinds have Grapes every day in the year. I may just mention that Gros Maroc has this season been sent into the market in good condition, and where this is the case satisfactory prices have been had for it. It remains to be seen whether it will hold its own with the Hamburgh and Alicante.

MARKETING.

Packing for market is a point of much importance to the grower. Every basket should be firmly and fully packed, with as little show of footstalks as possible. The surface of the basket should show a solid surface of well coloured berries. If a salesman has to keep your basket unsold for several days (which is often the case), and you have packed your basket so as to exhibit too much of the stalks of the berries, buyers are quick to note this, and know that when unpacked and exposed for sale in shop windows they rapidly shrink. So cover up the footstalks as much as possible, and you will be doing yourself, and all through whose hands the fruit will have to pass, a favour.

THE NATIONAL CHRYSANTHEMUM SOCIETY.

THE first Chrysanthemum Show of the season reminds the admirers of the popular autumn flower that the busy season is approaching rapidly, though it seems difficult to think about dull November in such brilliant summer weather as we are now having. Those, however, who visit many gardens in all parts of the country, cannot fail to be impressed with two facts, first that Chrysanthemums are still extending in popular favour rapidly, and secondly that great advances have been made in their cultivation. The decline of the Chrysanthemum, so often predicted, has not yet commenced, and though the present year is likely to be the most important in its history, there is yet a long future before so useful a plant.

The National Society may be said to have entered on a period of great interest to Chrysanthemum growers, for many are looking forward to the centenary celebration next November as likely to prove a gathering such as London has not witnessed before amongst autumn floral displays. Mr. W. Holmes has taken up the direction of affairs with his accustomed skill, and the programme of arrangements for the four

days will soon be issued. The first day, Tuesday, November 10th, will be distinguished by an opening ceremony, at which the assistance of some of the Patrons or Vice-Presidents is expected. Upon the same day a Conference will also be held in the Library, when the historical and artistic aspects of the Chrysanthemum will be discussed. Upon Wednesday the Show itself will furnish sufficient attractions for visitors. On Thursday another Conference will be held, dealing chiefly with practical subjects, and a banquet will be arranged to be held in St. Stephen's Hall at 6 p.m., when Lord Brooke, M.P., President of the Society, will take the chair, and the innovation of allowing ladies to be present will be tried. The fourth day, Friday, the conclusion of the festival, will be devoted to a conversazione in the afternoon, followed by the presentation of prizes. This programme, with the unusual attractions of the liberal schedule, should result in a fine competition and a large gathering of Chrysanthemum admirers.

A few words are necessary respecting the Show at the Royal Aquarium last week, for time would not admit of a report in our previous issue, and it is unnecessary now to give all the formal details. It must be said that it was one of the best of the series held at Westminster this year, under Mr. Holmes's superintendence, Chrysanthemums, Dahlias, Gladioli, Roses, and miscellaneous collections of plants and flowers being very abundant, but the prizetakers were nearly all the same as those mentioned in our full report of the Dahlia Show at the Crystal Palace. The Chrysanthemums only can be here referred to. The groups showed a distinct advance upon those at shows in previous years both in quality and taste of arrangement. Messrs. J. Laing & Sons, Forest Hill, were the leading exhibitors, but Messrs. Reid & Borneman of Shrewsbury Road, Sydenham, and Mr. Norman Davis of Camberwell, also exhibited uncommonly well for the remaining prizes, Mr. H. J. Jones, Ryecroft Nursery, Lewisham, having so good a non-competing group that he was awarded a silver medal. The collections of cut blooms from Messrs. Owen, Davis, and Such were noteworthy; but the finest cut blooms were the examples of Madame C. Desgrange and its sports, which gained Mr. J. Blackburne, Elmstead Grange Gardens, Chislehurst, first prizes in several classes, Messrs. Blair, Howe, Beech, and Stevens taking second and third prizes in the same classes. Mr. Blackburne's blooms were specially remarked last year, and they again caused quite a sensation, their size, substance, and purity bringing them into the first rank as exhibition flowers, and such as would compare favourably with many of the best of other standard varieties at the November shows.—C.

THE BRITISH FRUIT GROWERS' ASSOCIATION.

A VISIT TO CRAWLEY.

THE third of the Conferences arranged to be held by the above Association during the present year was announced to take place at Brighton on Thursday, September 11th, and after the Crystal Palace meeting it was suggested that as a party would on that day be travelling down from London, an excellent opportunity would be afforded for a visit to the Crawley district under the guidance of the local secretary for Sussex, Mr. Joseph Cheal. The idea met with approval, and, as a result, a party of the earlier rising members of the Association reached Horley at 8.30 A.M. on Thursday morning, where Mr. Cheal had the necessary conveyances in readiness. The morning was delightfully bright and fresh, and the drive to Crawley was greatly enjoyed by all. At the Lowfield nurseries the party was received by Mr. J. Cheal, sen.—who, at the venerable age of ninety, appears to be more active in mind and body than some men at half his age—and by Mr. Alexander Cheal. A hurried inspection of the extensive and well-stocked nurseries was commenced, and much valuable information was conveyed by the conductors respecting the peculiarities or qualities of certain varieties of fruits, stocks, modes of training, &c. Apple budding was just in full progress, and a few of the members left mementos of their varying degrees of skill in this important operation by commencing a row, preparing the buds and stocks, tying and completing the work. In another portion of the nursery, a member who farms much land in Essex proved that he was master of the details of his work by guiding a plough with all the skill of an experienced hand. Several other practical demonstrations followed. The plantations and "quarters" of healthy young fruit trees in all stages were inspected with the keenest interest, particularly the cordon trees, of which so many are grown at Crawley. Dahlias of all sections and many other outdoor plants were still gay with flowers, notwithstanding the recent frosts which in some districts have caused much devastation.

This part of the morning's proceedings concluded with a substantial lunch generously provided by the Messrs. Cheal. Another pleasant drive to Three Bridges, and a rapid run to Brighton prepared the party for the more serious portion of the day's business.

THE CONFERENCE.

As previously announced the conference was held in the King's apartments of the Royal Pavilion, in conjunction with the excellent show of plants, flowers, and fruit provided by the Sussex Horticultural Society under the management of Mr. Edward Carpenter. The Mayor of Brighton, Mr. Alderman George Manwaring, had kindly consented to take the chair, and he was supported by the Rev. Cox Holes, Councillors Ballard and Booth, and Mr. T. Francis Rivers (Chairman of Committees); amongst others present being Mr. Philip Crowley, Mr. Lewis Castle (Hon. Sec.), Mr. J. Roberts, Mr. G. Gordon, Mr. J. Cheal, Mr. A. Cheal, Mr. R. Smith, Mr. W. G. Head, Mr. G. Hammond, Mr. Stephen

Ade, Mr. R. Turner, and Mr. T. W. Beach. There was also a good attendance of fruit growers and others in the district especially interested in the matter.

The Mayor opened the proceedings at 4 P.M. with a brief but pithy speech, in which he referred to the objects of the Association, and dwelt especially upon the importance of facilitating the distribution of fruit to consumers. Mr. T. Francis Rivers followed with a few general remarks, of which the following is the substance.

He mentioned that the British Fruit Growers' Association was founded about two years ago, at the time when public attention was directed to the fact that a great industry was in danger of passing away from this country, and that no serious efforts were being made to prevent the withdrawal, but the various speeches and essays delivered on the question caused a large increase in planting, which would no doubt have a very sensible effect upon the fruit market in time. There had been and were many diverse opinions as to the profits to be derived from fruit culture, and unless it could be proved that there was a reasonable profit to be obtained, no advocacy would extend the plantation of fruit trees in England or elsewhere. The basis must be on the firm foundation of profit to the producer and advantage to the consumer. Passing on, he expressed his surprise at the absence of any large orchards to be observed on the railway journey from London to Brighton, and argued that if the land round Brighton could be available for fruit growing, the town would alone require hundreds of acres for the constant supply which was furnished unceasingly by the purveyors. That this demand was not supplied by Sussex could not be due to the quality of the whole of the land, or to the rigour of the climate, and it seemed much to be desired that the causes of the want of production should be investigated. It was grievous that the large sums paid for fruit should not go into the hands of the neighbouring cultivators, as it surely could be placed in the Brighton Market with as little expense for carriage as when derived from London. The speaker passed on to the system of fruit growing, observing that his own system of planting was to trench 24 inches deep, to apply fifty tons of good farmyard manure per acre, and to plant Apple and Plum trees 9 feet apart, dwarf standards, with stems 4 feet clear from the surface of the soil to the first branch, and a row of Black Currants, Gooseberries, Raspberries, or Strawberries, between the rows of permanent fruit trees. This arrangement would give about 1600 trees per acre, and as all the trees would commence bearing in about three years, the time of return was rapid compared with the farm orchard, being seven standard trees. The cost of this plantation was great. It was an investment of capital, and could only be undertaken by those who could afford to wait, but the profits in the end were considerable. In dealing with the sorts of Apples and Plums to be grown, he warned growers against planting old sorts, new varieties being more vigorous and more hardy.

Mr. J. Cheal, in commenting on some of the remarks of Mr. Rivers, maintained that fruit growing could not be taken up in a day, and he went on to advise prospective growers before entering on the undertaking to consider all the circumstances and surroundings. To turn out rightly the thing must be begun rightly, and they must especially consider whether they could make a better profit by supplying the markets retail than by wholesale. For a retail supply they would have to rear a large number of varieties of fruit, but for a wholesale supply fewer varieties would be necessary. Regarding the climate, to show that it was not wholly responsible for the scarce growth of fruit in the south, he would like to point out that from one Apple tree planted by a friend of his in Essex, in ten years—1872-82—forty and a half pecks of Apples were produced, and they were sold at the Chelmsford market at the rate of about 6s. per bushel. That meant an acre of such trees was worth £363. In a part of Sussex, too, a grower had a capital produce, and realised very satisfactory prices at the Eastbourne market. He only gave this as an illustration, and did not wish anyone to run away with the idea that anything like so large an amount could be realised from every acre of trees planted. Mr. Councillor Ballard and several other gentlemen also took part in the discussion.

Mr. G. Gordon next gave a review of what had been observed by himself and Mr. L. Castle in the recent tour in Ireland, and referred to the collection of Irish fruit which had been conveyed from the Crystal Palace Show, and were exhibited in another portion of the building.

At the conclusion of the Irish discussion Mr. J. Roberts, formerly of Gunnersbury, read a paper on "Grapes for Market," which was regarded as one of the most important contributions to the subject that has yet been made public. As far as possible in a paper of this kind he dealt with all the principal aspects of the subject in a thoroughly practical manner, as can be judged from the paper itself. (See page 241).

In the unavoidable absence of Mr. W. Iggulden, who had prepared an admirable and exhaustive paper upon the "Culture of Tomatoes for Profit," the portions dealing with culture were read by Mr. J. Cheal, and excited much attention, as there were several growers present who are engaged in the production of Tomatoes for market on an extensive scale. The cultural instructions were, however, generally confirmed by those who heard the paper read. In the course of the discussion Mr. A. Cheal furnished some interesting statistics with regard to the important fruit growing industry in the Worthing district. He said that 585 tons of fruit were despatched from Worthing and 78 tons from Lancing Station during the year, a combined total of 663 tons, of which he should say fully 50 per cent. were Tomatoes. Apart from the railway despatch quite 25 per cent. were sent by road. Such figures were encouraging, and showed the increase of the industry, while he should like to say that the prices realised for the fruit averaged 5d. per pound.

The supply had increased with the demand, and perhaps the supply had created the demand. About 350 tons of Tomatoes were produced in the district, £20,000 was the estimated value of the Tomato crop, and the other fruit crop £14,000, which made a total of £34,000.

Mr. Robert Smith of Kenwards, Yalding, had prepared an able paper describing his methods of cultivating Peaches and Pears on walls, with which for many years he has been extremely successful. Owing, however, to the time occupied by the preceding papers he consented to confine himself to the culture of the Peach and Nectarine, concerning which he gave some important details. This concluded the programme, votes of thanks to the readers of the papers and to the Chairman bringing the third successful meeting of the season to a close.

THE MARKET GARDENS OF WORTHING.

Some of the members of the Association remained in Brighton until the next day with the intention of visiting the principal market gardens in Worthing. This was accomplished in most favourable weather, and under the guidance of Mr. A. Cheal and Mr. W. G. Head, both of whom were well acquainted with the district, an instructive tour was commenced. Some of the leading Grape and Tomato growers' establishments were visited, and at each place the members were received with a degree of courtesy and attention that was most gratifying. It would be quite impossible in the space of a brief report like this to do justice to a tithe of what was seen, but it was the unanimous verdict that better all-round Grape culture had never been witnessed. This applied with equal force to the last establishment visited, that of Mr. J. Pullen-Bury at Sompthing, a short distance from Worthing and Lancing. There a house of Muscat of Alexandria and one of Lady Downe's were seen that will probably never be forgotten by any of those who were present. Such large, even bunches and berries, such a clean bright appearance, and such a crop surpassed, as regards the Muscats, everything that the visitors had ever seen before, and, as one experienced Grape cultivator remarked, "It takes all the conceit out of us." Mr. Pullen-Bury is, however, a remarkable man; an inspection of his houses shows that, and a short interview with him on business matters proves it. Indomitable energy, unflagging perseverance, and keen observation have enabled him to succeed in no ordinary degree when others would have failed. We saw instances even amongst these market gardens where the places and the businesses were evidently drifting in the wrong direction from a lack of the all-important guiding energy and attention.

In the course of the day it is estimated that between twenty and thirty tons of Grapes were seen, and with few exceptions these were all of remarkable quality, the weight of the crop on both old and young Vines being astonishing. The Tomatoes were to some extent exhausted, but in nearly all cases they were planted in rows on the floor of span-roof houses, three or four rows on each side to the centre, then trained upright to the roof, and in many instances they were a dense mass of growth, that seemed strangely opposed to satisfactory results.

Peach culture at one time occupied a good deal of space and attention at Worthing, but seems to be almost entirely discarded now. Cucumbers are largely produced, and some of the growers also cultivate Apples, Pears, and Figs out of doors, but with the exception of the last-named the under glass culture is by far the most important.

THE WEST TARRING FIG GARDEN.

All round the district Figs appear to thrive in a remarkable manner, and perfect fine crops of fruit; but the most interesting garden is one devoted entirely to Figs at West Tarring, a mile or two from Worthing. This is about an acre in extent, and a perfect thicket or a forest of old and grand Fig trees, which yield a bountiful crop for a small share of attention. Some of the trees are evidently of great age, and upon one is a board with the following legend inscribed thereon:—"The oldest Fig tree in England. Planted by Thomas à Beckett 800 years ago." Antiquity has certain attractions, and no doubt many have gone away deeply impressed with the above statement. Competent authorities have, however, estimated the tree to be 100 or possibly 160 years old as the extreme limit—quite old enough, and 600 or 700 years more or less are of small consequence to local historians in places of public resort. In a search for some historical particulars concerning this Fig garden, the following note from the pen of the late Mr. G. W. Johnson was found, and is so appropriate that it is reproduced. After referring to the Figs at Arundel, he says:—

"I pass on to Tarring, known by that name in Anglo-Saxon records, for King Athelstan about the year 943, gave the manor 'to the church of Christ in Canterbury,' and in Domesday Book it is mentioned as part of the Archbishop's possessions. In 1277, the tenant not paying his rent, which might be taken in kind, a record states the prices at which some of the produce might be claimed: 'a good goose 1d., two good hens 1d., five score of eggs 1d.' A quarter of Wheat was 1s. 6d., but the Archbishop thought he ought to have more for his money, and demanded two good geese for 1d., four fat hens for 1d., the first hundred of eggs for 1d., and the second hundred for nothing! Well, in process of time Thomas à Becket became Archbishop, and tradition has handed down as a fact that he planted Figs brought from Italy in the Manor grounds of Tarring. There is no record of his residing there, but it is likely that he did, for, as I have stated, it was one of the estates belonging to the see, was a pleasant place for retirement, and it is certain the Archbishop occasionally resided among the tenants of the archiepiscopal estates. A large room and a smaller one still existing, tradition tells, were the hall and chapel of Becket's palace. They may have been constructed of its materials, for they are very old, but their architecture is of a date

full two centuries later than that in which Becket lived. There is nothing to prohibit it being true that Becket brought from Italy the Fig to Tarring. Ecclesiastics have introduced this fruit to more than one of the archiepiscopal residences. Cardinal Pole planted it at Lambeth, and Archbishop Cranmer at Mitcham. In both these instances the variety is the White Marseilles, and so is the large standard in the Tarring garden, which is here portraited, and that garden adjoins the grounds round the ancient rooms, said to have been Becket's.

"The Fig garden at Tarring is three-quarters of an acre in extent. There are about 100 trees in it, chiefly of the Purple (Brown) Turkey variety, and these bear most abundantly and unfailingly. They have no pruning, and the knife is only employed occasionally to thin the branches. These interlace, for the trees are planted only 12 feet apart, and are about 18 feet high. They form a dense grove, and nothing flourishes beneath them. The central walk shown in the drawing is an avenue of Fig trees 247 feet in length. The grand old White Marseilles tree, the most prominent figure in that drawing, is believed to be a descendant of one of those planted by Archbishop Becket. Judging from other large Fig trees, the ages of which are known, I should conclude that it is quite 150 years old. The circumference of its stem just above the soil's surface is 9 feet, and it separates into four main limbs, each nearly 3 feet in circumference, and the branches from them cover a circle

field. We used to have exhibitors from the north and from the west, but at both of the Shows of which I now write the only exhibitions where the flower can be shown in London, there was one trade exhibitor and two amateurs—Mr. Burrell in the former class, Mr. Lindsell and myself in the latter, and yet I hear from those who sell the bulbs that there is a large demand for them, so much so that Mr. Kelway of Langport has kept adding to his culture until now he has 25 acres set apart for them! And yet it is not a difficult flower to grow. It will thrive on most garden soils, although, like all bulbs, it dislikes a stiff clay. True, it has its drawbacks. Corms will die, and losses must be experienced; but they are so very cheap that some of the best show varieties may be obtained for a few pence. I look to some other cause for their absence from the exhibition table. In the first place, they get but scant encouragement in the way of prizes, and at neither Show can the amateur obtain more than one prize. Although he may not be actuated by mercenary motives, yet he does like to have an opportunity of paying his expenses; but an amateur, say from Yorkshire, goes to a good deal of expense and trouble to come up to the Aquarium on the chance of winning the munificent sum of 20s. Then it is one of the most troublesome flowers to place properly on an exhibition table, especially to come up to the standard now required. I remember when they used to be brought up in trays and baskets, but that will not do



FIG. 30.—THE WEST TARRING FIG GARDEN.

40 feet in diameter; they would extend much further if it were not for the other Fig trees crowded around. They rarely ripen a second crop, but they did so about three years since. The first crop ripens in August, September, and October, and the average produce of a tree is twenty dozen of Figs. Mr. Lower, in his "History of Sussex," remarks that a bird resembling the beccafico or Fig-eater of Italy migrates hither during the Fig season. The flocks remain five or six weeks, and then disappear as they came—seaward. The Italian Fig-eater is known to ornithologists as the *Sylvia naevia*, but the Fig-eater of Sussex is the White-throat, *Sylvia cinerea*."

This must for the present conclude the record of the most agreeable excursion the Association has yet taken, and in returning late on Friday night the wish was expressed that many more of a similar character may be undertaken.—L. CASTLE.

GLADIOLI AT THE CRYSTAL PALACE AND THE AQUARIUM.

It is a very disappointing experience to one who has for thirty years and upwards been endeavouring to persuade amateurs to cultivate and exhibit this most beautiful autumn flower, to find that not only does not the number of exhibits increase, but that they show an actual falling off. I have seen during my long cultivation of the flower many coming to the front, and then after a year or two retiring from the

nowadays. I had some boxes made on the late Mr. Chapman's principle, but these are useless now. The flowers would touch one another, and the spikes would not go into the box. In order to show them properly the spikes must be cut the day before. Each one must have a stalk to which it has to be tied. They have to be tied separately in the case for travelling, the most approved form of this being a framework covered with canvas; and then when the exhibition place is reached they have to be taken out, each fastened again in its place in a tray which must be taken with them; and after all this a chance of a grand prize of a pound! These things, together with my experience of many years, do not make me very hopeful as to a large increase in the number of exhibitors.

Mr. Burrell of How House Nurseries, Cambridge, was, as I have said, the sole exhibitor in the trade class at both places, and his stands were without doubt magnificent; in fact I doubt if ever such a collection was ever before set up. He showed not only some of the best French varieties, but also many of his own seedlings, which were quite equal in quality to those from abroad. Many of the spikes had twelve, fourteen, and in some cases fifteen expanded blooms on them. All flowers that have been taken in hand by the hybridiser have shown great improvement, but I do not think there is one that has shown such wonderful progress as the Gladiolus, as a reference to the plates and descriptions published years ago in the "Florist" clearly shows. Among the French varieties exhibited by Messrs. Burrell & Co were Baroness Burdett Coutts, lilac, tinged with rose and purple, a very large flower,

giving also a very fine spike, always very taking in a stand, not so good in substance as it might be, but very grand; Grande Rouge, a brilliant fiery red with violet blotch, very similar to that fine old flower Meyerbeer, but larger and earlier in blooming; Dalila, light rose, striped with white, magnificent spike of well formed flowers; Atlas, pale porcelain, lightly tinted with violet, a very beautiful and constant flower with grand spike; Conquerant, dark purplish carmine, clear white blotch and bands; Corinne, carmine, white stripe; Daubenton, suffused violet, large flower, very distinct and good; Horace Vernet, purplish red, blotched and striped white, a very fine flower; Minos, fine flower, an improvement on Celemine, which it greatly resembles, colour rose blotched with cherry; Pyramide, delicate rose. He had a large number at both places of his own seedlings; of these some have been already certificated, and one obtained a certificate at the Aquarium, while there were others which were quite equal to anything we have. Snowdon he did not exhibit, but it is a grand white flower. He was awarded a certificate at the Aquarium for Vicar of Westwell, a very fine flower, orange salmon, with white blotch and purple feather. He had also Ossian, fiery red, with crimson flakes; Iolanthe, a very beautiful salmon pink pale flower, which has already been certificated; Cygnet, a very beautiful flesh white flower; Sorcerer, a reddish orange flower, with deep brownish carmine flakes laid on much in the same way as the markings on the wings of the swallowtail butterfly (*Papilio Machaon*), a most striking flower, somewhat in the way of Tigré, one of the new French varieties; Imperator, a beautiful variety, somewhat in the way of Abricoté; and some other unnamed seedlings of which we may know something more.

I now come to the amateurs, and here I may write more freely than I have done on other occasions, for I have had to come down from my perch. Having for a long series of years taken the first place, I have this year been content to take second, my excellent friend Mr. E. B. Lindsell, whom I had frequently urged to take up the culture of this flower, having taken the first place. It is the old story,

"The old man has been beaten by the boy."

At the Crystal Palace it was a very close run; I never saw a more careful, and I may add correct, judging of two stands of *Gladioli*, and their nearness may be estimated by the fact that there were only three points between us. Among the flowers I had there was a very fine white flower of Souchet's, Mont Blanc, for which I was awarded a first-class certificate. It is a grand flower, but I question whether in the purity of colour or in length of spike it will equal Mr. Burrell's Snowdon certificated last year. The two stands of twelve put up at the Aquarium were the best ever put up by amateurs, and whereas in the Crystal Palace stands there were some weak spikes, those of mine especially, which had been assuredly an accident, there were no weak ones in these twenty-four spikes. Mr. Lindsell's consisted of Baroness Burdett Coutts, very fine; Grande Rouge, with twelve expanded flowers; Daubenton, Titania, Horace Vernet, Rayon d'Or, Hesperide, Sceptre de Flore, Pyramide, Iolanthe, Atlas, and Adolphe Brongniart. Mine were Splendens, Dalila, a grand spike with twelve blooms; Le Vesuve, Baroness Burdett Coutts, Pollux, Abricoté, Formosa, Sceptre de Flore, Mount Etna, Atlas, Grande Rouge, and Nereide, and I may add, for the encouragement of those who may wish to grow these lovely flowers, that those exhibited on the two stands average in price from 5d. to 1s. 3d. each. I had also a very beautiful seedling, Purity, for which I read in the *Times* I was awarded a first-class certificate, the very whitest *Gladiolus* grown, pure white and absolutely without any feather or marking of any kind on the petals. I may add that this season has been a favourable one, the cool and still weather suiting them admirably, and I should hope, as I have already stated, that this fine dry September will ensure good sound bulbs. I may also add that nearly every one of these flowers were from roots which had been cut in halves before planting, showing the success of that plan.—D., Deal.

FIRBECK HALL.

FIRBECK HALL, the seat of the Rev. H. G. Jebb, is situated amidst sylvan scenery and undulating country, purely pastoral and agricultural, close on the boundaries of Yorkshire and Nottinghamshire. It is surrounded with a park of some sixty acres in extent, well timbered with Oaks, Elms, &c., and the house and grounds are sheltered with belts of trees, which break the fury of gales and storms. The nearest populous town is Rotherham, eleven miles away, but the pleasant little market town of Worksop, in Nottinghamshire, is only seven miles off, through which place the main line of the M.S.L.L. Railway passes. Worksop is a centre from which visitors to the far-famed Dukeries start on their pleasant excursions. The Dukeries, which include the mansions and estates of Welbeck, Clumber, and Thoresby, lie within the boundaries of Sherwood Forest, made famous by the exploits of Robin Hood and his foresters. The beautiful wooded country for which this part of the county of Nottinghamshire is famous, also extends, but in a slightly less degree, to the north-western border of the county, close to which is Welbeck, but in Yorkshire territory. Between Worksop and Firbeck there is the village of Carlton, with a pretty church and all the evidences of quiet rural customs and contentment. A Moorpark Apricot tree flourishes on a warm gable end facing south in this district, and its beautiful crop of fruit, ripe and golden in the sunshine, was a pleasure to see. The harvest was ripe and abundant, but unsettled weather had prevented the commencement of its ingathering.

My object, however, is not to describe the country and the district, but the gardens at Firbeck Hall so far as a brief visit could furnish details of much that is interesting and well worth describing in these pages. In these notes, however, the first and most important place must be given to the main object of my visit, a description of the carpet bedding.

It is in such a place as Firbeck, with its extensive stretches of green sward, of lawn and park, with noble trees in single specimens and in knolls and groups, that carpet bedding can be enjoyed to its fullest extent, there being present all the necessary conditions to its effective contrast. Then, again, the place is extensive enough to admit of other forms of flower gardening, which can be enjoyed when the eye is tired of resting on the colour and formality of the carpet beds. To say that the carpet bedding at Firbeck is well done is only to put it mildly. It is done in a very superior and artistic manner, which does infinite credit to the originality, skill, and industry of Mr. Egglestone, the head gardener. In the finished and perfect style which is there adopted it represents a vast amount of labour in the preparation of the plants and in the tedious process of planting, which has to be done at a busy season of the year, when other claims of important work have to be attended to. Large numbers of beds are treated in the carpet style, some of them being of great extent. The principal and most artistic beds are situated on the terrace in front of the house, most of them being circular and three-lobed beds. Beginning at the eastern end of the terrace nearest the mansion, the first bed is circular in form. It is edged with a band of *Sedum glaucum* and *Mesembryanthemum cordifolium* variegatum. A large Maltese cross forms the centre, having an edging of *Sempervivum californicum*, and filled up with *Echeveria farinosa*. Two of the spaces between the points of the cross are filled with an *Alternanthera* named *Firbecki*, which was raised there, and has been tried for four years. It is a very distinct and beautiful variety, having small narrow leaves of deep rich crimson shades, and is considered to be a much better variety than any similar one in cultivation. The effectiveness of many of the Firbeck beds is largely owing to the employment of this variety, which he considers worthy of a name and a place amongst the best of the coloured-leaved carpet-bedding plants. The other two spaces are filled with *Alyssum variegatum*, and in the centre of the whole bed is planted a green-leaved *Dracæna*. Between this bed and the third comes a three-lobed bed edged with a permanent edging of Yew only a few inches high, inside which is a line of blue *Lobelia*, then a band of William Sandy *Pelargonium*, the centre being filled up with well flowered specimens of Tuberous Begonias, interspersed with a small-leaved variegated *Fuchsia*. Next to the carpet beds the Tuberous Begonias are a feature of the place, and very healthy plants covered with flowers the whole of them are. They are two-year-old roots, and the stout dark green healthy foliage they produce, surmounted with bright and handsome flowers, afford an excellent contrast to the mosaic patterns of the carpet bedding. The next bed is a circular one. In the centre is placed a single plant of *Echeveria metallica*, the design being a four-pointed star filled up with *Alternanthera Firbecki*. Outside the star the groundwork is composed of *Sedum glaucum*. Four ovals are filled with *Alternanthera Firbecki*, and the points of the star run into patches of *Echeveria farinosa* on each side of *Mesembryanthemum cordifolium* fol. var., and the outer edge is a rim about a foot wide of the above *Mesembryanthemum*. The next bed has Begonias edged with Yew, followed by *Lobelia* (blue), dwarf variegated *Fuchsia*, the centre filled with Tuberous Begonias; but the centre of all is filled with *Pelargonium White Perfection*. The above is a three-lobed bed.

Another circular carpet bed follows. *Echeveria metallica* is used as a central dot plant. Then a diamond of *Alternanthera amoena*, surrounded with a narrow edge of *Herniaria glabra*. Then follow dot plants of *Echeveria secunda* with ovals and diamonds of *Alternanthera* and *Herniaria glabra* on a groundwork of *Mesembryanthemum cordifolium* fol. var. An edging of *Echeveria farinosa*, planted 6 inches apart. This is a very attractive and pleasing bed. We next come to the most attractive and splendid bed of the whole lot. It is circular in shape. The centre is occupied with a *Dracæna*. Then a square with four running points filled with *Alternanthera Firbecki*, and running into triangles of *Echeveria farinosa* marked out with *Leucophyton Browni* with silvery white foliage on a groundwork of *Herniaria glabra*. Four Maltese crosses of *Alternanthera Firbecki*, filled up with *Sedum glaucum* and side pieces of *Spergula aurea* attached with a circle of the same, the edging of the bed forming a double row of *Echeveria farinosa* with dot plants of *Echeveria secunda*. We next come to a circular bed of Begonias edged similarly to the others, but the central part planted with a groundwork of *Sedum glaucum* with a view to hide the soil during the early part of the season before the Begonias attain some size, and cover the ground as they do now with abundant foliage. The next is another circular carpet bed with a central plant of *Echeveria metallica*, surrounded by *Mesembryanthemum cordifolium* fol. var. to match the 18-inch circular edging of the same with *Echeveria farinosa*, planted 9 inches apart, just peeping through the *Mesembryanthemum*. The groundwork of the bed is *Sedum glaucum*, in which are four heart shapes of *Alternanthera aurea* and four triangles of the dark *Alternanthera tricolor*, each one edged thinly with *Echeveria farinosa*.

The next bed is a three-lobed one, edged with Yew, blue *Lobelia*, and Mrs. Wright bicolor *Pelargonium*, scarlet Begonias, the centre filled up with White Perfection *Pelargonium*. The next is a circular carpet bed, the same design as No. 1, but having a central plant of *Grevillea robusta*. The end of the terrace is marked with two tall

Cedars (*C. atlantica*), at the foot of which are planted Robert Fish Pelargonium, interspersed with Fuchsias.

Passing across the broad grand walk we come to the opposite portion of the terrace, in a circular corner of which is placed a large circular bed with a large metal vase in the centre. A Clematis Jackmanni is planted in the ground at the foot, and the stems are trained round the outside, and when the plant is in flower, as it is now, a pretty effect is produced, and more especially so when the Scarlet Vesuvius Pelargonium, with which the vase is filled, is also in full bloom. Immediately under the vase the ground is filled in with Golden Feather Pyrethrum. Then placed at equal distances are eight heart-shaped spaces about 18 inches long filled with Alternanthera Firbecki, and dotted round the bed, also at equal distances, are small plants of the variegated Fuchsia. Then follow eight circles on a groundwork of Mesembryanthemum cordifolium fol. var., the main groundwork of the bed being Herniaria glabra with outer circle of Echeveria farinosa and Mesembryanthemum mixed, the whole edged with a sloping side of Sedum glaucum 18 inches wide. At the opposite end of the terrace a bed of the same size matches this.

The next bed is three-lobed edged with Yew, followed by a very distinct edging about a foot wide of the Ivy-leaved Pelargonium peltatum elegans, the centre of the bed being Lass o' Gowrie tricolor Pelargonium, and the lobes filled with Iresine Herbsti.

After this is a circular carpet bed with a Dracæna in the centre, and in the middle of a square with running ends of Alternanthera Firbecki. Side ovals of Alternanthera aurea surrounded with Leucophyton Browni on a groundwork of Herniaria glabra, and traced with Sedum variegatum, and the outer edge or circle intermixed with Kleinia repens, and the sides edged with Mesembryanthemum cordifolium fol. var. Four dot plants of Echeveria or Sempervivum tabulæforme on a ground of Alternanthera aurea. Eight squares near the edge of Alternanthera Firbecki and A. tricolor alternately. There are also dot plants of Echeveria secunda. The next bed is a three-lobed one of Tuberous Begonias and Mrs. Wright Pelargonium. Then follows a circular bed having a central star of four points filled with Alternanthera Firbecki, with a centre of Echeveria secunda. Four ovals interlaced in the centre between each point of the star, and filled also with Alternanthera Firbecki, then eight side semicircles of Alternanthera aurea. Four dot plants of Echeveria farinosa at the foot of each point of the star, each Echeveria being surrounded with Spargelia aurea with Leucophyton Browni standing up among it, all the groundwork and side edging being Sedum glaucum.

Many more beautiful beds on the terrace remain to be described, but the most distinct and unique of the many attractive designs have been noticed, perhaps somewhat imperfectly, but still sufficiently, it is to be hoped, to enable the readers to imagine the tasteful combinations of colour and outline which Mr. Egglestone's beds so vividly portray.

Before leaving this lovely terrace, however, it should be stated that just below it, and reached by a flight of steps, is what is known as the Fountain Garden. This is bedded out in an attractive style, but time would not permit of an inspection of it, but sufficient was seen to show that nothing but what was useful and attractive was employed. At the western end of the house was also a splendid set of beds filled chiefly with flowering plants, a large central circular bed being composed principally of grand plants of Tuberous Begonias full of handsome bloom and dark green ample foliage, and just now, and for some time to come, they will be in their best condition. A large vase is also conspicuous among these beds, being planted all over, inside and out, with succulent plants, Echeveria secunda, and Sempervivum californicum.

Carpet bedding, however, claims a little more attention in this part of the grounds, in front of the large conservatory. Here there are four large beds, four-lobed in shape, having circles of Alternanthera amœna, and diamonds of Alternanthera Firbecki, the latter being edged thinly with Echeveria farinosa on a groundwork of Herniaria glabra. Dot plant in the centre, Sedum Sieboldi variegatum. Four triangles of Alternanthera tricolor, and a good edging of Mesembryanthemum cordifolium fol. var. all round. These beds are planted in pairs, the one at the opposite end matching this. The two inner beds are composed of a groundwork of Antennaria edged with Golden Feather. The 3 feet divisions of Iresine Herbsti; Alternanthera aurea two divisions. Four triangles of Lobelia Brighton Blue, with a central plant of Dracæna australis. Being of large area these beds are very conspicuous, and their treatment is bolder than the front terrace beds, but they are in perfect keeping with the surroundings, and exhibit the same nicety of execution, the dividing lines of each figure being clearly defined throughout, and the colours harmonise in perfect contrast to one another. Had time permitted, many interesting notes could have been taken of the other beautiful flower beds which have not been included, also of the capacious vases twined with Clematis and filled with Pelargoniums, &c., and other interesting features. It remains to be said, however, that flowers for cutting are not overlooked, all the most popular hardy herbaceous plants being cultivated for this purpose chiefly on the extensive kitchen garden borders, where they flourish and flower freely. The place is full of interest and instruction, especially to the flower gardener, who here will see the best of everything both in foliage, flowers, and colour design that can be seen in any northern garden. Absorbed and interested as we were, it was with reluctance we closed our inspection of the flower garden, regretting that we had not seen it under genial sunshine, which would have increased its beauty and added to the enjoyment of the onlooker.

Before closing these notes a few words must be said on other

features of the place, but the remarks made will necessarily be brief. Grapes are grown well at Firbeck in three spacious vineries, constituting early, midseason, and late houses, which provide a succession of good, serviceable, well-coloured bunches of fruit, lasting through the winter and sometimes far into early spring. The varieties grown are Muscat Hamburgh, Trebbiano, Black Hamburgh, Mrs. Pince, Lady Downe's, West's St. Peter's, the four latter with Muscat Hamburgh forming the varieties grown in the late house, Mrs. Pince being the latest of all, and Black Hamburgh keeps well until Christmas. The back wall of the late vinery is covered with Figs. Isca, a new variety, is being tried, but reliance is placed chiefly on Brown Turkey for the main supply. Gathering the latter variety is commenced about the end of June, and the crop lasts a month; a second crop is afterwards produced, and is now swelling.

In the plant stoves flowers of the choicest stove plants are obtained. Eucharis amazonica is in good condition, and good crops of flowers are thrown up twice a year. Allamanda Schottii is planted out in a 2-foot square border about 18 inches deep. It covers a large extent of the roof, and produces abundance of flowers. Every year about January, after a good rest, the bunches are spurred back pretty freely. There is also a fine specimen of Musa Cavendishi, which generally fruits every two years. Stephanotis floribunda is also planted out the same way as the Allamanda in good turfy material. Weak wood only is thinned out, and plenty of flowers are produced from May onwards to the end of August, after which pot plants carry the supply of bloom on to November. Dipladenia boliviensis, having white flowers with a yellow throat, is planted out, too, in a similar way, and the flowers, which are very useful for buttonholes, are gathered in quantity. Plenty of decorative plants for the house are grown, the object being to provide abundant furnishing material at all seasons. We next come to the Melon house, where we find Asparagus plumosus and Stephanotis planted out and in fine condition. A second crop of Melons is swelling rapidly, the varieties being Albert Victor and Hero of Lockinge. Winter Cucumbers are also planted, and will take the place of the Melons later on. All the Year Round and Telegraph are the varieties relied upon for winter.

The next house contains useful Poinsettias in 6 and 7-inch pots, promising to produce good bracts of bloom during the dull season of the year, extending from the beginning of December to February. Achimenes are grown too in 6-inch pots, and a number were just ready for flowering. A good plant of the strongest scented variety of Parnassia, P. fragrans, attracts attention; one strong stem bearing twelve beautiful blooms, and another stem was developing a similar number. A long shelf of Cyrtopodium insigne in 6-inch pots was noticed, and the plants were sending up flower stems pretty freely. There was also a similar shelf in another house of Calanthes vestita, Veitchi, and rubra, in 6-inch pots. These were growing vigorously. Tomatoes for an early supply are grown in pots in the vineries. Sutton's Earliest of All and Sutton's Perfection are found to be the best for early work. The first named, however, has the fault of coming too much corrugated, but the latter generally gives nice shapely fruits, and it is a good setter.

In conclusion, I may say sincerely that I am indebted to Mr. Egglestone for the kind and courteous manner in which he volunteered information and explanations about anything I had the pleasure and time to inspect; and if I have in these notes conveyed any interest and pleasure to the readers of the Journal, the remembrance of my brief visit to Firbeck will be doubly enhanced.—S.

THE ROYAL NURSERIES, EXETER.

By a combination of circumstances I found myself a short time ago in the ancient, yet still flourishing, city of Exeter, a city that teems with interest to the student of antiquities, but the shrewd and hospitable inhabitants of the Devonshire capital are not content to rest upon past glories alone, but have the energy and tact to carry on at the present time a thriving, if not a gigantic, trade. Wherever we find general business in a thriving condition we are sure to meet with established nurseries that provide for the public wants from an horticultural point of view. The nurseries above named are admirable examples of a well-managed firm, who not only do a large local trade, but whose fruit trees, Roses, shrubs, and seeds are known throughout Great Britain. These nurseries are carried on by Mr. Robert Veitch, who bears a name well known and respected among all classes of gardeners. At the time of my visit I was much struck with some fine trained trees of Dymond Peach, which were trained to a wall having a west aspect. They were in a thoroughly healthy and thriving state, carrying an exceptionally heavy crop of large highly coloured Peaches. I have not previously met with this Peach growing in the open air, but judging from the fine fruit produced here in such abundance it must prove a valuable kind for outdoor culture, especially as it was here bearing freely upon quite small trees, as well as upon larger ones. Lord Napier and Downton Nectarines upon the same wall were also carrying large highly coloured fruits. In many districts Peaches are a very scanty crop this season; it is, therefore, all the more instructive to record examples of successful culture, especially in cases like the present, when the trees have received no protection whatever. Mr. Veitch considers his success due, in a great measure, to the fact that his trees are root-pruned every autumn, so that they can at any time be lifted with complete balls of earth. All kinds of fruit trees are largely grown at the Exeter nurseries,

and the soil seems to be well adapted to that purpose, being moderately heavy and of a reddish yellow colour, resembling very much in appearance the soil in which Mr. G. Bunyard grows his Kentish fruit trees so well. Large breadths of the most popular kinds of Apples, Pears, Peaches, &c., were represented by sturdy young trees with well balanced heads. Whenever a portion of the nursery is cleared of trees Potatoes are grown upon it for one season, and when the land is prepared for this crop a dressing of lime is given, which proves highly beneficial to the fruit trees which follow the Potato crop.

Carnations and Picotees are largely grown. The majority of them were past their best at the time of my visit, a notable exception, however, being a fine yellow variety named Germanica, which was raised here, and from a packet of seed sown every plant came true, both in form and colour, and as I saw them in full beauty they were a remarkably fine batch. I also noticed in close proximity to the Carnations a nice batch of that useful early flowering Chrysanthemum Madame Desgrange, which were beginning to open their flower buds, and which are highly valued for cutting purposes. Japanese Maples have for some years been a speciality of this firm, and judging from the rare beauty of the numerous varieties grown here they are destined to become exceedingly popular plants, and are worthy of a place in greenhouses and conservatories as well as in the open air, for they are as remarkable for the light and graceful habit of their growth as for the beautiful tints of their leaves. Dahlias of all sections are well grown, and though not yet in full beauty give promise of some remarkably fine blooms. Such fine new varieties as Amphion and Panthea were included among the Cactus section.

The houses were filled with a general collection of such plants as are found most useful for supplying local wants, there being a great demand for cut blooms and small plants. I was much struck with the white form of *Agapanthus umbellatus*, which is here well grown, as were also fine batches of *Lilium auratum* and *Lilium rubrum*. A light span-roofed structure was entirely filled with a very showy collection of Tuberous Begonias, double and single forms being represented by flowers of a very superior type, good in form and substance, and extremely bright in colour, the scarlets and yellows being particularly good. Mr. Robert Veitch is especially interested in his Begonias, because they have been brought to their present state of perfection by the gradual improvement made in each generation of their own seedlings. I must not forget to mention the plants of *Cœlogyne cristata* and *Lemoineana*, which were thriving wonderfully well, without any special attention being given them.—KENTISH MAN.



EVENTS OF THE WEEK.—The chief horticultural event of the approaching week will be the Grape and Dahlia Conference in the Royal Horticultural Society's Gardens at Chiswick on Tuesday and Wednesday next, September 23rd and 24th. We may again call our readers' attention to the arrangements made for the gathering, which are as follows:—Collections of Grapes are to be arranged in groups. A—Sweetwater Grapes, including Chasselas and Muscadines: (1) Black or purple berried varieties; (2) White, green, or golden berried varieties. B—Muscat and Frontignan Grapes: (1) Black or purple berried varieties; (2) White, green, or yellow berried varieties; (3) Frontignan. C—Vinous or late keeping Grapes: (1) Black or purple berried varieties; (2) White or golden berried varieties. Classes are also provided for Grapes of very high flavour (any kind). American varieties: Grapes grown entirely in the open air; Grapes grown under glass without artificial heat; foreign-grown Grapes; pot Vines with fruit; examples of packing Grapes for market, to be sent by rail; examples of packing Grapes, 4 lbs. to 6 lbs., for private use, to be sent by rail; examples of the enemies of the Grape Vine—diseases, injurious insects, &c. Thus this programme is sufficiently comprehensive, and the Exhibition should attract a large number of visitors. The Dahlia Conference will be held on Tuesday, September 23rd. Mr. Harry Turner (President) in the chair, and papers will be read by Mr. Shirley Hibberd, Mr. T. W. Girdlestone, and Mr. W. H. Williams. The Grape Conference will be held on Wednesday, September 24th, Dr. Hogg (President) in the chair, and papers will be read by Mr. T. F. Rivers, Mr. R. D. Blackmore, Mr. W. Thomson, and Mr. W. Coleman.

— **THE GUILDHALL (LONDON) FRUIT SHOW.**—We are informed by the Fruiterers' Company that this Show, which opens on October 6th, will be under the patronage of Her Majesty the Queen, with the following noblemen and gentlemen as Vice-Patrons:—The Right Hon.

the Lord Mayor, the Duke of Bedford, the Duke of Westminster, the Duke of Newcastle, the Duchess of Grafton, the Marquis of Salisbury, the Baroness Burdett-Coutts, Earl Spencer, K.G., the Earl of Coventry, the Earl of Jersey, the Earl of Dartmouth, the Earl of Lathom, Lord Crewe, Lord Savile, Lord Egerton of Tatton, Lord Hothfield, Lord Wolverton, Lord Moreton, Viscount Emlyn, Sir Nigel Kingscote, K.C.B., the Right Hon. W. H. Smith, M.P., the Right Hon. W. E. Gladstone, M.P.; E. H. Palmer, Esq., Master of the Mercers' Company; J. S. C. Heywood, Esq., Master of the Drapers' Company; W. R. Shaw, Esq., Master of the Lethersellers' Company; Charles Whitehead, Esq., Walter Gilbey, Esq., Charles Howard, Esq. Gardeners and others who have not obtained schedules can procure them from O. C. T. Eagleton, Esq., 40, Chancery Lane, London, W.C. It is desired that this exhibition be made known to cottagers and farmers who grow fruit in their gardens or orchards.

— **THE WEATHER** in the METROPOLITAN DISTRICT has continued exceptionally fine during the whole of the past week, and very rarely have we experienced such a period of uninterrupted sunshine in September. The heat on several days has been like midsummer, the shade temperature standing at 56° at 6 A.M., and rising above 70° by mid-day. Communications from different districts show that this has been general, though there are now some indications of an approaching change.

— **POTATOES IN IRELAND.**—I think I shall be able to prove that Mr. Wright and Mr. Castle are quite correct in presuming thick planting of Potatoes to be the main cause of the disease, having such dire results in a wet season such as we are now passing through. When planted in "lazy beds" a foot from plant to plant each way is all the space allowed. Now when it is remembered that the bulk of Potatoes grown on "lazy beds" are Champions, it will be readily imagined what a dense mass of foliage cover the beds, rendering it impossible for either sun or wind to penetrate, and thus dry the ground and under portions of stems and foliage. We make it a practice to plant Ashleaves 2 feet apart from row to row, and a foot apart in the rows; stronger growing kinds are allowed a foot more space both ways. This year, when every one around us is complaining of small, wet, and "black" diseased Potatoes, I am pleased to find when lifting ours that we have not had such good Potatoes for the last four years. They are larger than we have ever had them, free from disease, and quite dry when cooked. I attribute our good fortune to the thin planting, and thus giving root and branch abundant space for development. It is not that a good dressing of manure affected the improvement, for none was given. Manuring ground for Potatoes is a thing of the past as far as we are concerned, and we get heavier crops and of superior quality when we plant in unmanured ground. Seed of a red kidney Potato was given me a few years ago without a name. It is an enormous cropper, and to my taste a capital eating Potato. I enclose a few, and should be glad if you would test their cooking and eating qualities.—HANDY ANDY.

— **WARE AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.**—The monthly meeting of this Society was held on the 9th ult., the Rev. A. E. Lofts presiding. The attendance was very satisfactory. A capital paper was read by Mr. H. Brown on Strawberries, a subject in which all the members appeared pretty well posted up. A lengthy discussion followed, in which several members joined, and a hearty vote of thanks was accorded the essayist for his paper.

— I FORWARD you a photograph of a new STYLE of ORNAMENTAL GARDENING which I am showing here in twenty of the best designs that I can procure. It is as much as possible to imitate carpet bedding, but worked by minerals in six distinct colours, broken up small to the substance of rather small gravel. The materials are dark blue glass, light blue ditto, sand, gravel, ochre, black brick, red and green glass. The ground is thoroughly prepared, so as to keep down the worms from doing damage, or heavy rains from splashing the material. This work is equally as good in winter as it is in summer, the weather having no effect on it. It can be either laid loose on the ground to the required design, or on a firm and durable foundation, and may be worked out in the most elaborate designs that decorative art can produce. I have it patented, as it ought to be of use on ground where it is difficult to get much show from plants or flowers.—WM. SHERWOOD, 105, Seamer Road, Scarborough. [The coloured photograph shows an elaborate geometrical design in several tints. We have frequently seen similar beds in suburban gardens near London, but cannot say that they excite much admiration.]

— PEACH DR. HOGG.—We find this an excellent variety for growing on an outside wall. It is now ripening, and the flavour is first-rate. Last season the foliage had a decided yellow cast, but by relifting the trees this has changed to a dark and healthy colour.

— PEA VEITCH'S PRODIGY.—This is the best main crop Pea we have had this season. It has been most productive, both the pods and Peas being of large size and first-rate quality. It also keeps in use a long time.—Y.

— I HAVE not hitherto had an opportunity to remark how thoroughly I agree with all Mr. Abbey said in his recent article on CANKER. Much has been written about this matter, and very varied have been the opinions or suggestions offered, but Mr. Abbey seems to have finally cleared up all doubts and difficulties by giving us a full explanation based on indisputable facts.—J. R. S. C.

— CHRYSANTHEMUM BELLE PAULE.—I have often heard it said that there is a secret in taking the buds of Belle Paule. May I ask Will some of your able correspondents be kind enough to give their experience with this variety as to taking the buds? I find that some of the buds on the strongest shoots are liable to go blind, while those on the weaker shoots set as freely as any of the old varieties. Advice on the subject will be gladly received.—G. P.

— MR. D. B. CRANE, Archway Road, Highgate, is taking a place amongst the earnest AMATEUR EXHIBITORS, and the application of his characteristic energy to the culture of Chrysanthemums is certain to bring good results. At the Aquarium last week he secured two first prizes for twelve Pompons and twelve bunches of flowers unrestricted as to section, besides some minor prizes in other classes. Mr. Cox of Brickendon Gardens, Herts, had six wonderfully fine blooms of Edwin Molyneux, proving how well this variety comes early in the season; in size and colour they were equal to the best we have seen.

— EARLY FROSTS.—It would appear superfluous to speak of frost so early as the first day of September perhaps to dwellers in the south of England, but here, in North Somerset, such actually happened on the date quoted, as well as two or three succeeding mornings, and although not sufficiently severe to do much injury, many tender plants were drooping from its effects. I note a record of two or three degrees of frost has been registered in Shropshire, which would be much the same experienced in open places here. The fields were quite white with the hoar frost, and distinctly crisp to the feet, but in enclosed gardens less severe cold was felt.—W. S.

— THE WEATHER LAST MONTH.—August was changeable and showery, but without a great quantity of rain, the total amount being 1.76 inch, which fell on twenty days, the greatest daily fall being 0.31, on the 28th. We had thunder on 16th and 26th, and a gale on the 15th. Wind was in a westerly direction twenty-two days. It was bad weather for getting in the harvest, and Potato disease spread fast in the tops. Highest shade temperature was 81° on the 5th, lowest 37° on the 24th 30th, and 31st; lowest on grass 32° on 24th. Mean temperature of the month 58.44°. Barometer, highest 30.30 inches on 31st, at 9 P.M.; lowest 28.38 inches, at 9 P.M. on the 26th; average height 29.91. The garden spring was running eighteen gallons per minute on the 31st.—W. H. DIVERS, *Ketton Hall, Stamford.*

— BLATTA GERMANICA.—“Entomologist's” inference relative to the harmlessness of the above does not correspond with my experience of them. They have infested our hothouses and propagating cases for years, and their ravages amongst cuttings are both impartial and annoying. They are particularly fond of *Acalypha musaica*, and will soon devour the leaves from the cuttings unless special precautions are taken to prevent their doing so. We frequently find cuttings of *Ficus clastica* with the bark eaten off all round close to the soil, and this evil we can only trace to *Blatta germanica*, of which we have hundreds in all stages of growth. We have also a quantity of crickets, which are very destructive at times, especially amongst newly started Vines in spring, the leaves of which they will eat out in shreds.—J. H. W.

— TWO FINE HYDRANGEAS.—Unusual examples of good cultivation are sometimes found in unexpected quarters. An instance of this may be seen in the garden of the Crown and Sceptre Hotel, Streatham Hill, where two very fine specimens of the old-fashioned *Hydrangea* have been flowering for some weeks past. These plants have quite a little history of their own. About twenty-two years ago, Mr. Cribb, a former proprietor, rescued them from a rubbish heap and cared for them during many years. Later on, the present proprietor,

Mr. Cauldwell, took them under his care, and now each plant occupies a tub 3 feet in diameter, is 7 feet through, with a height of 5 feet from the ground, and each plant has borne upwards of 150 flower trusses this season, many of them being 7 inches across. The plants are the picture of health, and during this long period have never had the protection of a greenhouse, the only covering being some mats during severe weather. Mr. Cauldwell is proud of his plants, and delights in showing them to his friends.—E. B.

— PRESENTATION TO MR. LYNE OF WIMBLEDON.—A concert was held in the Dog and Fox Hotel one evening last week, on the occasion of a presentation to Mr. J. Lyne, one of the joint Hon. Secretaries of the Wimbledon and District Royal Horticultural and Cottage Garden Society, on his leaving to take charge of a garden at Chislehurst. Mr. M. Clarke presided, and there was a good attendance of members. The Chairman said they were all cognisant of the services Mr. Lyne had rendered to the Horticultural Society and to other local institutions during his many years' residence in the town. He had made a great many friends, and they all hoped he would be as highly esteemed in Chislehurst as he was at Wimbledon. He then handed Mr. Lyne a handsome anti-magnetic keyless half-hunter silver watch, engraved with the following inscription:—“Presented to Mr. J. Lyne by a few old friends on his leaving Wimbledon, September 13th, 1890.” He hoped that when Mr. Lyne looked at the watch it would remind him of the pleasant time he had spent in this locality. He then presented Mr. Lyne with a timepiece, in oak, as a gift to Mr. and Mrs. Lyne jointly.

ANNUALS FOR CUTTING.

THE demand for cut flowers is increasing every year, and the gardener's energies are often sorely taxed, hence hardy annuals which are easily grown and often far more suitable for cutting than choicer flowers should be largely employed through the summer months. Some of our modern flower stands are of great size, and to dress them effectively must have long-stemmed flowers, indeed whole plants or large branches are often required, and this necessitates cutting many unexpanded flowers, which, of course, is a waste. If a choice plant is operated upon that is only grown with difficulty, it will not be surprising if the gardener becomes a little disturbed. Annuals are so easily grown and take so little time that one can freely cut or even pull up the whole plant if necessary without the least compunction.

Poppies have had much attention in late years, with the result that all sections of them have been greatly improved, so that now we have colours and shades from pure white to deep scarlet, and in the *Pæony*-flowered section we have huge double flowers, white, pink, scarlet, and glossy black. The Shirley Poppies are useful for dressing stands, but they entail much labour, as like all Poppies their petals soon fall, and the stands have to be attended to every day. For early summer use sow in autumn, and for summer and autumn sow at different times in spring. Poppies are of easy culture, doing well in ordinary garden soil, and although they may be transplanted, yet the best results are from those sown where they are to flower. They should be thinned from 1 foot to 18 inches apart. Iceland Poppies are not, strictly speaking, annuals, but hardy perennials, still they may be treated as such, and flowers better adapted for dressing small stands can scarcely be imagined. Their colours are white, yellow, and rich orange-scarlet, and they are entirely devoid of the objectionable Poppy odour; indeed, they emit a very pleasant scent. They are perfectly hardy, and should find a place in all choice herbaceous borders.

Lavatera trimestris (rose and white) is extremely useful for cutting purposes. It is surprising this useful annual is not more generally grown, it is so effective both for garden decoration and in a cut state. Seeds may be sown in March in ordinary garden soil where they are to remain, or they may be transplanted successfully during dull weather if well cared for. Those who wish for a stately easily grown plant, either for the back of borders or for cutting, will not be disappointed with *Lavatera trimestris*. They grow from 3 feet to 5 feet high and branch freely, hence they should have plenty of room to do them justice.

Chrysanthemum tricolor and its varieties are very useful for cutting, but being rather stiff plenty of foliage should be arranged with them. Improved varieties have late years appeared, so that now we have a considerable range of colour, all of which may be had in a mixed packet of seed. For a long succession of bloom sow in autumn and again in spring, and thin to 15 inches apart.

Centaurea cyanus is one of the few British weeds that is considered worth cultivating, at least for decorative purposes. This old Corn Bluebottle is, however, one of the most useful that can

be grown for cutting; its colours, producing beautiful shades of blue, are very uncommon and greatly needed. The best results are obtained from seed sown in the autumn, and being strong freely branching plants they should have plenty of room, 3 feet by 2 feet not being too much if grown on good soil. They will attain the height of 4 feet, and continue flowering all the summer. There are other colours of this plant—white, red, rose, purple, and striped. There are also double varieties, which we do not consider improvements.

For dressing small and medium-sized stands many hardy annuals are useful, but beyond giving the names of a few we have found suitable more need not be said about them, as their culture is easy and all much the same. The same preparation and the same soil that would grow a good crop of Carrots would grow hardy annuals to perfection, always provided they are allowed plenty of room. There is no cheaper way of filling flower beds, and if grown as recommended no more effective way, than by using hardy annuals. The too common practice of assigning them to some out-of-the-way corner, or to mixed borders where they are smothered by stronger plants, has done much in bringing them into disrepute; but give them half the attention that is bestowed upon bedding Pelargoniums and the result would be far more satisfactory than much of the ordinary bedding. The following hardy annuals will be found useful both for bedding and cutting:—All the varieties of Eschscholtzias, Godetias, Larkspurs, Sweet Sultans, Calliopsis, Candytuft, and Mignonette.—J. H. W.

AURICULAS IN SCOTLAND.

THE English and Scottish growers are out of harmony in regard to the proper time for repotting Auriculas. As stated by English growers in the horticultural journals, repotting should be commenced immediately after blooming, and should be finished by the end of June. I have never considered the reasons given for this as sound, and have never put the recommendation in practice. On the other hand, growers in Scotland think from the middle of July to the end of August the best time, and some go into September without any doubt of the plants doing well. This year all the growers with whom I am in correspondence finished by the end of August, and I am informed that now the plants are looking well and growing vigorously. All agree that this year the increase from the newest varieties has been small, but the older kinds have given the average number of offsets. In some collections green fly has been troublesome on account of the rains preventing the frames being fully open so often as could have been wished. The best method of clearing a plant of green fly is by drawing the leaf between the finger and thumb, and blowing them out of the centre with a smart puff. If the plants are frequently looked over green fly is easily kept down. Any plant largely infested should be held under a gentle run from a water pipe, and then placed in the open air till dry. These plans are better and sweeter than fumigating with tobacco. There has been in Scotland little or no autumn bloom. In my collection Heroine and the Duchess of Oldenburg are the only two showing trusses. The Duchess never fails with me to bloom in autumn, and some growers inform me that Heatherbell is their most persistent autumn bloomer. Some Scottish growers have been parting with many of their older varieties to make room, as they say, for newer sorts. This may be so, but it may also be that they may grow more of what they consider prize-takers at shows. Competitors have their own ways of working, but the true lovers of Auriculas for their own sakes will still grow the old varieties, around which so many tender memories linger, and add to them whatever new ones are worthy of being placed beside them. In my own collection there are some of the very oldest varieties that I would not part with on any consideration, although they have faults.

I would now like to make a few observations on increasing stock by beheading the plants. This is a process of some nicety, but with a little experience and the exercise of judgment it can be done successfully. I have often done it in former years, but this year I have made experiments on a larger number, and am satisfied with the results. In no instance has there been a failure. The separation of the stem must always be made below fibres. This I hold to be a *sine qua non* in the operation. I know it is often said that the head of a plant may be cut off without fibres, and struck at the side of a pot under a handglass. This is a tedious and unsafe plan, and it is on this account that I never behead a plant except I can cut below fibres. Dress the wound with powdered charcoal, and put a pinch or two on the top of the cone of soil when potting and there will be no danger. See that the stump is good at the extremity; if not, cut off any decayed part, and dress top and bottom with charcoal. If there are eyes below the cut fill the earth up to just below them, leaving the top above the soil; but this

year I have found that even without an apparent eye shoots will come. I proved this in the case of a plant of Mrs. Dodwell, which I had to behead in consequence of a drop in the centre causing the whole head to rot. There was not the slightest appearance of growth of any kind about the stump, but after some days two strong eyes appeared on the quarter of an inch left above the surface of the soil, and at present they are over an inch long and beautifully green. It is well known to all growers that some varieties will not increase except by beheading. A notable instance of this I have had in Low's Mazzini. As all the stock of this proceeded from one plant, which I got from a friend of the raiser's, I never could get an offset from it until I beheaded it, and every year I have done this, and so have been enabled to give my friends plants. This year I have two strong shoots from the stem of it. Mazzini is not a very refined flower, but it is desirable in a collection on account of its dark blue colour. From the stump of John Simonite I have five offsets, which will be fine separate plants by next spring. From Heroine I have seven offsets, from Eliza three, from my own King Lear two, from Duke of Argyle one, from Lancashire Hero one, and several from others of which without the beheading process I would have had no increase.

In the Journal of 4th instant I notice that "D., Deal," a veteran grower, asks, "Has any grower ever noted how long-lived an individual plant of any variety is?" I can give him sure information in the case of one of my varieties. I have had a plant of Gorton's Stadtholder twelve years. There cannot be a doubt that it is the same plant, because till this year it never made an offset, and it has been potted year after year a single plant. As the stem of the Auricula enlarges upwards, and new roots are sent out as the stem grows, a plant may be, in a sense, considered new every year. But an interesting point has been raised, and Auricula growers should take note of plants when procured, and obtain authentic information as to the age of any single individual plant.—JOHN MORRIS, *Mains by Dundee*.



CATTLEYA EMPRESS FREDERICK.

At the meeting of the Royal Horticultural Society on July 8th this year, Baron Schröder exhibited an exceedingly fine Cattleya, under the name C. Mossiæ Dowiana var. Empress Frederick, and so beautiful was it that a first-class certificate was at once accorded by the Orchid Committee. Possibly it is the result of a cross between a good variety of C. Mossiæ and C. Dowiana, but in any case it is remarkable for the large size of its bold, distinctly coloured, and fragrant flowers. The sepals and petals are pure white, the lip very broad, rounded, and of an intensely rich deep crimson or magenta, very neatly edged with white, and deep golden yellow in the centre. The plant shown was dwarf in habit, and had five flowers similar to that depicted in fig. 31.

C. Dowiana now ranks as a variety of C. Mossiæ, and Messrs. Veitch thus describe its history:—

"Originally discovered by Warscewicz in Costa Rica about the year 1850. He sent plants to Messrs. Low & Co., at Clapton, but arriving in bad condition they eventually died. The dried specimens that accompanied the living plants were sent by Mr. Low to Professor Reichenbach, but the parcel containing them failed to reach their destination; hence it happened that for some years afterwards doubts were entertained of the existence of so superb a Cattleya as that which the letters of the traveller described, and in which he expressed a wish that it should be named in compliment to Mrs. Lawrence, of Ealing, at that time one of the most liberal patronesses of Orchid culture and Orchid collectors in this country, a request of which Mr. Bateman could not have been aware when describing it many years later for the "Botanical Magazine," dedicating it by request of Mr. G. Ure Skinner to Capt. Dow, of the American Packet Service. It was re-discovered in 1865 by Mr. Arce, a native naturalist, while engaged in collecting natural history objects in Costa Rica for Mr. G. Ure Skinner. He sent plants of C. Dowiana to Mr. Skinner in England through Captain Dow, which were acquired by us, and one of them flowered for the first time in our Chelsea establishment in the autumn of 1865. The habitat of this Cattleya appears to be restricted to a small area on the slopes of the great central mountain range facing the Pacific Ocean, and where it is said to exist in very limited numbers. The variety aurea was discovered by Gustav Wallis; in

1868, near Frontino in the state of Antioquia, while collecting plants in New Granada for M. Linden, and four years later by Butler while on a mission to the same region for Messrs. Backhouse, of York. The late M. Roezl placed its habitat in the state of Antioquia, near the river Cauca at a considerable distance above its confluence with the Magdalena, a locality upwards of 600 miles distant from the native home, in Costa Rica, of the typical *C. Dowiana*."

CHERRIES FOR MARKET.

[A paper by Mr. G. Bunyard, read at the Conference of the British Fruit Growers' Association, Crystal Palace, September 5th, 1890.]

KENT is the greatest Cherry producing county in England. They were introduced there in the time of Henry VIII, and put under the care of Richard Hains, the King's fruiterer at Newington, a village near

finest fruit, large, juicy, and of good colour, these orchards are maintained by fattening sheep in them, such being well fed on corn, cake, and rich foods. Pigs are sometimes kept in such orchards, and in order to get direct benefit they should be penned in a limited space until the grass is eaten away, and then they are moved to the next space, and so on. It is better to do these limited portions thoroughly than to allow the animals a full run. During the time the leaves or fruits are on all cattle are kept out, as they will break the lower boughs, and in young orchards do irreparable damage.

In starting fresh plantations there are several ways of procedure—

(A). If the land is already in grass, holes of 2 feet square are prepared, and the trees planted at 24 to 30 feet apart, the roots being as much upon the surface as possible, and they are "cradled" with chestnut battens securely fixed. As this wide planting is a great loss of space, the smaller-growing Apples, Plums, and Damsons are planted



FIG. 31.—CATTLEYA EMPRESS FREDERICK.

Sittingbourne, on the main road from London to Dover, and the family is now represented there by men of the same name in the fruit trade. This parish still maintains its reputation as the best district for the culture of the Cherry, and in the deep brick earth there they attain to a great size, as much as 70 or 80 feet high. The annual sales attract buyers from all parts, and are the event of the year in the locality.

The older orchards have been planted in a haphazard way, but the more modern are in straight lines at 24 to 48 feet apart, and are perfect visions of Paradise when in full flower with their graceful wreaths of snowy white, the beauty of which cannot be imagined by those who have never seen them; in fact for the blossom alone Cherries are worthy of a place in parks and garden enclosures. All these orchards are in grass, and form convenient sheltered spots for lambing and for cattle, which, however, are not put in when the leaves fall, or into young orchards where they eat the boughs. In order to produce the

between them, such extra trees paying for their cost before the Cherries come to a profitable age; and when the Cherry boughs meet the other trees, which would be in fifteen or twenty years, they are cut out. Old Cherry orchards cannot be too highly manured, and one grower told me he had fattened about four sets of sheep per annum in his orchards, and that the Cherries were so fine that he sold the crop for £1000 on a small average; but young orchards of Cherries should only be planted in the ordinary soil.

(B). Another way, and one which brings a quicker return, is to plant Cherries at 30 feet apart, and fill up with Apples, Pears, or Plums at 15 feet, and then to plant the ground with Red or Black Currants and Gooseberries at 5 or 6 feet apart. In this case the land has to be dug annually and heavily manured in winter, but a crop is taken the second year, and in the fourth or fifth year the Apples and other fruits come to bear, the Cherries following about the sixth or eighth year.

It is important that land under Cherries should not be cultivated, and for the first three or four years 4 feet from the trees is left untouched; this is gradually increased when in about ten or twelve years the bush fruit is removed and the land laid to grass, the intermediate trees being removed as before.

(C). A Kentish plan is to put Cherries in Hop gardens at 36 feet apart, and after eight or ten years to lay the whole to grass; they make much progress in this way, as Hops must be cultivated highly to be remunerative. A danger in this case arises from too free growth, as gum is induced by occasional frosts acting on the sappy wood.

The pruning of Cherries is of the simplest. They are best allowed a year's growth before cutting back, which should be severely done in order to produce a well-formed balanced head of, say, five branches. The extra shoots are cut away, and from this time onward the trees make a naturally regularly balanced head, and only require the boughs to be thinned when they cross each other or are too thickly placed. A man should be able to get his head and shoulders between them easily. If any shoots break or twist off in a gale or through the burden of fruit, they should be cleanly cut away with a sharp knife, and if the form of the tree is seriously injured by this loss, the trees must be cut in hard to form them again; but, as a rule, the less cutting there is the better, and if a saw is necessary the exposed end should be rounded with a sharp knife to assist Nature in healing the wound. All young orchards should have the fruit gathered by means of step ladders, as the boughs cannot bear the weight of the ordinary ladders when young (under ten years old).

When the trees make over a foot of growth yearly they will be better left without any stimulants, but if the new wood is but 6 to 9 inches long they should be assisted with the manure before named, or by the application of liquid manure or top-dressings of any description of dung, or failing that bone dust, Odam's blood manure, Thomson's manure, or any similar chemical fertiliser will assist them. The Cherry naturally roots upon the surface, and this feels the benefit at once.

In making new orchards care should be taken to plant a considerable quantity in one spot, otherwise birds will take the crop. A few Cherries in a mixed orchard are rarely a paying investment. When in bulk it pays to have a man to scare or shoot the birds on the ground day and night. To do this a hut should be provided for him to sleep in, and he can thus keep off other larger animals to whom Cherries are a luxury. In the day he assists to move the ladders for the pickers, who in Kent are frequently women, who earn good money at the work, either by day pay or agreement per half sieve of 24 lbs. One gathering generally clears the trees, but it pays well to pick the sunny side first, and also the outsides of the branches; this causes the remaining fruit to swell up, and if these larger examples are marketed in 12 lb. baskets or "quarters" they frequently make 20s. to 30s. per bushel, or 5d. to 9d. per lb.

In setting out an orchard of Cherries care should be exercised to keep all of one kind together, and if alternate rows of the stronger kinds (such as Napolcon, Black Tartarian, Bigarreau, and Elton) are made to alternate with such growers as Black Cluster or Corone, Black Hearts and Brown Hearts) the grass below is not so much shaded, and consequently is of better feeding quality. Another useful and delicious race of Cherries, but little grown out of Kent, are what are locally called Reds, being the Kentish and Flemish, or the Montmorency of the Continent.

These are rather later than the sweet Cherries, and are far more delicious to preserve or for tarts than any others; in fact, the jam from these sorts is a perfect sweetmeat, and comes near to Tamarinds in its delicate and pronounced ratafia like flavour. These (Reds) never make large trees, and are short lived, so that they are frequently used to plant between the larger kinds or for the odd distances on the outsides or in angles where there is not space for the strong growers. I would specially commend these to the Scotch growers, who would find them even better than their noted Dundee marmalade. Taste sample made 1889. After the main boughs decay they send forth fresh growth from the stem or the stumps, and in that way fruit for fifty years, but their average life is only about twenty-five years, by which time they have well paid their way. This race are also the best for drying. The Morello Cherry is of similar growth, succeeds well as a standard, while the May Duke and others of that race are useful for sheltered spots.

As regards varieties, the following list includes those generally planted for profit, and can be relied on for extended culture; fully developed trees of two or three years in the head are worth 180s. to 250s. per 100, but the Kent growers prefer those with one year's heads, at 130s. to 170s. per 100.

White or Heart Cherries.—Kent Bigarreau or Amber, Napolcon Bigarreau, Florence, Elton, Frogmore Bigarreau, Governor Wood.

Red Cherries.—Kentish, Flemish, Olivet, Morellos.

Black Cherries.—Early Rivers, Werder's Black Heart, Waterloo, Black Eagle, Black Cluster or Carone.

Duke Cherries.—May Duke, Late Duke, Royal Duke.

For private gardens the following are useful as standards:—Early Lyons, Emperor Francis, Ludwig's Bigarreau, Nouvelle Royale, Tradescant's Black.

In connection with this subject I would suggest that orchard trees should have at least a stem of 6 feet, and should be trees worked on the wild Gean, as the stems so formed are hardier and less liable to gum and die than when they are worked low and run up on their own stems; and grafted trees are preferable to those "budded."

Grass orchards of Cherries are largely planted in Kent, as there is always the chance of three crops, viz., Cherries, mutton, and wool, and it is rare for all these to fail. The following notes may interest your members as to the nature of Cherry orchards in Kent. The custom is to sell the fruit upon the trees about fourteen days after the flowering, and from the fall of the hammer the buyer puts in his own men and takes all the risk, finding his pickers, overlookers, packers, &c., and delivers them to the rail himself, the grower simply taking the proceeds of the sale less 5 per cent. commission. When it is considered that this only represents a part of the produce of the land, you will understand that a Cherry orchard on a holding often adds letting value to an estate or single farm. In fact a Cherry orchard never goes begging for a tenant. From £20 to £40 per acre is an average price for an established orchard; choice lots have made £80 per acre. Plantations of dwarf Cherries are not grown except the Morellos, which, as pyramids, bear as fine fruit as from a wall, and from the large number of trees per acre must prove a profitable investment.

There is yet another Cherry grown in Kent of great importance. It appears to be the wild Morello, or the native form of it. This produces a small flat fruit, which is somewhat acid in taste, but the juice is of high specific gravity, and is the base of the famous Grant's Morello Cherry brandy, which is made at Maidstone only, and is to the so-called Cherry brandies of the trade and the Kirsche-waters of the Continent as real Highland whisky to poor gin. The maker is a neighbour of mine, and a most conscientious and painstaking and scientific distiller, who spares no pains or expense to maintain the high qualities of this wholesome and delicious cordial. The growth of this tree resembles a Birch more than a Cherry, and it soon assumes a pendant form from its copious crop and the wiry growth it makes yearly.

I have dealt hitherto with Cherries on a large scale, but they may be profitably grown by cottagers on the gables of their houses, and by farmers on their walls and buildings, and will in these positions produce fine large fruit, which can readily be protected by fish netting, which is doubtless cheap in these parts. Such fruit would be ready to pick before the outside crops, and command a good price packed in $\frac{1}{2}$ lb. or 1 lb. punnets.

The packing of Cherries in Kent is done in this way. After having first lined his basket with blue paper, the ends of which lap over about $1\frac{1}{2}$ foot (in order to turn back to cover the fruit when the basket is full). The fruit being gathered, the packer carefully passes them through his hands in tipping out the picker's basket, and then removes any bird-pecked, unripe, or smashed fruit, and with a quick shake settles the fruit firmly in the receptacle. This is generally placed on the scales, so that the proper weight (24 lbs.) is given, allowance being made for the basket. He then levels the top with his hand, and spreading the paper over and tucking in the edges, places a small portion of brake, short dry grass, or fine straw upon the top, and fastens this with two pieces of wood pointed at each end to fix under the rim of the sieve. After cutting off the ends that protrude beyond the outside of the rim the work is done.

The baskets have a hollow base, so that when set one on the other the fruit is not smashed. The sticks usually used to pack are split hazel of about 2 inches round, or the shoots of the Cob nuts taken out in "wandering" the Nut plantations.

The price of Cherries varies much with the weather and the crop, from 1d. to 8d. per lb. In your district, where possibly Cherries could be delivered direct to the shops, the packing at the top could be avoided by using baskets which fit one on the other, and they would in this way be less bruised, and open, fresh, and inviting.

GARDEN CHERRIES.

For pyramids on Mahaleb stock, where they can be netted, Early Rivers, Belle d'Orleans, May Duke, Black Eagle, Governor Wood, Arch-

duke, Nouvelle Royale, Royal Duke, Waterloo, Ronalds' Late Duke, and for tarts, &c., Morello, Kentish Red, Flemish, Olivet. For walls the best are Early Lyons, Early Rivers, May Duke, Governor Wood, Black Eagle, Bigarreau Napoleon, Florence, Bigarreau de Mezel, Black Tartarian, St. Margaret's. Amongst the little known kinds Emperor Francis, Guigne de Winckler, Ludwig's Bigarreau, and Windsor from America we think are destined to become established favourites.

Cherries are in some places very successfully grown up the rafters of cold Peach houses as single cordons, grand examples are thus produced which attain a large size. For this purpose the following are useful, and possibly cordons on the Mahaleb are preferable—Black Eagle, Black Tartarian, Florence, Early Rivers, Bigarreau Napoleon, St. Margaret's would be the best.

CULTURAL INDUSTRIES IN WEST AFRICA.

OUR possessions on the West Coast of Africa, consisting of the Gambia, Sierra Leone, Gold Coast, and Lagos, occupy, for the most part, narrow strips of country parallel to the seacoast, and extend to no great distance inland, except along the banks of a few of the principal rivers. The circumstances of these possessions and their relations to the natives in possession of the high lands in the interior have hitherto prevented attention being devoted to any agricultural pursuits of a settled character.

Both the European and native communities have so far directed all their energies to the development of trade in such commodities as are brought to them from the interior. These commodities, with the exception of some gold and ivory, are mainly the natural products of the forest, such as have required little at the hand of man except the trouble of collecting and conveying them to the coast. There are, it is true, a few native agricultural industries carried on in a crude manner, such as Ground Nut, Cotton, and the raising of corn, Yams, and vegetables. The value and extent of these would appear at present to be very small. Owing, however, to the depreciation in the value of Ground Nuts, Palm oil, and Palm kernels, which have hitherto formed the staple exports of West Africa, a change is gradually taking place in the sentiments and feelings of the natives, and a desire, wisely fostered by the intelligent policy pursued by the local Governments, is expressed in favour of giving more attention to the systematic cultivation of the soil. Botanical stations have recently been established at Lagos and the Gold Coast for the propagation and experimental cultivation of industrial plants, and, as shown in the *Kew Bulletin*, considerable interest has been taken at Kew in the development of numerous plant products which have been sent to this country from West Africa for valuation and report. The present Governors of our West African possessions are keenly alive to the desirability of directing attention to the development of agricultural industries, and at no time, possibly, in recent years have these possessions received more attention in this country than at present. For this awakened interest we are indebted to Sir Alfred Moloney, Governor of Lagos; Sir W. Brandford Griffith, Governor of the Gold Coast; Sir James Shaw Hay, Governor of Sierra Leone; and Mr. T. Gilbert Carter, Administrator of the Gambia. These officers, it is needless to say, have fully realised the importance of encouraging agricultural enterprises, and taken a leading part in the steps necessary for directing attention to them.

Sir Alfred Moloney published in 1887 a "Sketch of the Forestry of West Africa, with particular reference to its Principal Commercial Products." In this work all available information has been brought together respecting plants yielding oils, gums, rubbers, coffee, cacao, medicinal substances, spices, and many others.

As an additional sign of the times, it may be mentioned that a small work has recently been published in this country by a native of Sierra Leone under the title of a "Manual on the Cultivation and Preparation for Export of some of the Commercial Products indigenous and exotic in Sierra Leone." A youth from the same colony has just carried off a prize at one of our agricultural colleges; and we may add that Governor Moloney has a scheme under consideration for sending some native youths from Lagos to be trained at Jamaica in the culture of economic plants suited for West Africa.

As frequent inquiry is made at Kew in regard to plants likely to flourish in West Africa, the following Memorandum, prepared, in the first instance, for the Royal Niger Company, is now published in an expanded form for the information of those interested in our West African possessions:—

MEMORANDUM ON THE EXPERIMENTAL CULTIVATION OF ECONOMIC PLANTS IN WEST AFRICA.

Experimental plantations in West Africa, where systematic cultivation has not yet been carried on, to show what is really suitable to the soil and climate, should include at first a large number of economic plants, for the purpose of testing those which afford the best prospect of being adapted to local circumstances. The reports which have already reached Kew from this region, and especially from the botanical stations at Lagos, the Gold Coast, and the Gambia, show that many useful plants could be grown there. These centres will in time be in a position to select a few of the most promising plants, and distribute them for extended culture in different portions of their respective colonies. Many of the ordinary tropical plants requiring a damp, humid atmosphere all the year round and entire freedom from droughts

are evidently not suited to many parts of West Africa. The prolonged drought experienced during several months of the year, often accompanied by very dry winds, would be fatal to the remunerative culture of such plants.

It is evident, however, that if it were possible to plant large areas with a few select plants, such as Liberian Coffee, fibre plants, Egyptian Cotton, Cardamoms, Ginger, Indigo, Black Pepper, and similar plants yielding raw material in large commercial demand in this country, there would be a fair prospect of the results being eminently satisfactory. The plants mentioned above may be regarded as in many ways suited to the soil and climate of West Africa, and the number could be yearly increased as the results of the cultivation in the experimental plantations are more fully known.

If any of the colonies possess stretches of sandy coast land, it might be taken up for the planting of Cocoa-nut Palms. The Cocoa-nut thrives in deep, sandy soils near the sea, and already the plantations established in various parts of West Africa show that this valuable plant could be grown upon a large scale most successfully and profitably. It is true it takes a long time to come into bearing. On the other hand, the fruit is always in demand, either fresh, made into oil, or prepared in various ways, such as "copra," to suit the markets of the world. Recently an industry has arisen in Germany to prepare a very palatable butter from the kernel of the Cocoa-nut. The process so far is entirely in the hands of a private firm (Messrs. Müller & Sons of Mannheim, Baden), but if the industry is extended, it will undoubtedly increase the demand for fresh nuts in European markets. Cocoa-nut coir, the fibre prepared from the husk of the Cocoa-nut, is an article extensively used for manufacturing purposes in Europe. Coir prepared experimentally at Lagos under the direction of Sir Alfred Moloney was lately valued in London, and proved of good quality. Particulars in regard to the requirements of the London market for Cocoa-nut coir are given in the *Kew Bulletin* for June, 1889, pp. 129-132.

Egyptian Cotton is just now attracting attention. When the staple is long it fetches a high price. It might be tried in West Africa on a large scale, and with this view it would be desirable to obtain seed direct from Egypt. Full information respecting West African Cotton and its value in the English market is given in the *Kew Bulletin* for June last, p. 135.

Coffee of both sorts, Arabian and Liberian, should be cultivated on a large scale in every West African colony. The Liberian Coffee grows freely at almost sea level, while the Arabian Coffee will flourish on any of the hills in the interior. Now Coffee production in the East Indies is so greatly reduced on account of the leaf disease, there is likely to be a large demand for this important food product at remunerative prices. Where any difficulty exists in pulping and curing Coffee it might be shipped to this country in "cracked" state, that is, in a thoroughly dry condition after being directly gathered from the trees. Information on this subject is given in the *Kew Bulletin* for May, 1888, pp. 129-132; and November, 1888, pp. 261-263.

Of fibre plants there are several that are adapted to West Africa. Already the Bowstring Hemp yielded by one or more species of *Sanscerviera* has been successfully prepared at Lagos, and the market value of the fibre has shown it to be of high quality. To establish an industry in Bowstring Hemp it would be necessary to plant at least 200 or 300 acres before steps should be taken to introduce machinery to clean the fibre. The Death Fibre Machine Company, of 147, Leadenhall Street, E.C., might be in a position to supply particulars as to the success of growing Bowstring Hemp in Cuba and also as to the best machines for preparing the fibre.

The Sisal Hemp plant, *Agave rigida*, variety *Sisalana*, could very easily be introduced to West Africa. Small plants in quantity are probably obtainable from Florida. The Sisal Hemp would grow in dry, arid districts unsuited to almost any other plants. If 500 plants were introduced at first, these after two or three years would yield sufficient suckers to establish several acres. The Ramie or China Grass plant may be regarded as unsuited to West African enterprise at present, and it would be useless to devote attention to it unless there is a sufficient supply of labour to work large plantations and suitable machinery is obtainable to decorticate the fibre at a low cost.

Of the Jute class of fibre plants there are two very valuable fibre plants already abundant in West Africa. There are the Bolobolo (*Honkenya ficifolia*), fully discussed in the *Kew Bulletin* for January, 1889, and the Toja (*Urena lobata*). The fibres of these plants are probably worth £18 to £20 per ton, and the price is always likely to be maintained at such a figure as would render a Jute industry remunerative. It might be possible to get the natives to clean these fibres by hand and sell the produce in small lots locally.

Amongst plants usually cultivated in tropical countries and already under experimental trial in some parts of West Africa are the Annatto (*Bixa Orellana*), Cassava (*Manihot Aipi*), Arrowroot (*Maranta Arundinacea*), Vanilla (*Vanilla planifolia*), and Pimento or Allspice (*Pimenta officinalis*). These do not appear to yield remunerative results at present. They are, however, well worthy of attention, and especially if the natives can be induced to grow any of them. Annatto seeds are now sold at prices that cannot pay expenses. It might, however, be a matter for consideration whether the colouring matter could be manufactured into what is known as Annatto roll, cake, or paste. These could be easily prepared as indicated in the *Kew Bulletin* for July, 1888. For paste or cake there is a more steady and satisfactory demand than for seeds. Indigo, as is well known, requires a special system of cultivation and manipulation, and if taken up at all it must be on a

large scale. The Yoruba Indigo yielded by *Lonchocarpus cyanescens*, *Benth.*, is described in the *Kew Bulletin* for November, 1888, p. 268, with a figure of the plant. Yoruba Indigo sent to Kew by Sir Alfred Moloney was valued in 1883 at 4s. to 4s. 6d. per lb. It is possible that this sort might be more successful in West Africa than the ordinary Indigo. The natives are accustomed to the preparation of it, and it is only necessary to eliminate the earthy matter and portions of the stems usually found in Yoruba Indigo to produce samples worth nearly as much as the best Bengal Indigo.

Vanilla and Pimento are valuable spices, but probably not everywhere suited to the soil and climate of West Africa. They might, however, flourish inland where it is damper and moister, and it would be well on this account to keep them under observation and increase the stock in view of future action.

It is a little doubtful whether the Cacao or Chocolate will eventually justify the hopes at present entertained respecting it. Although the plants survive the dry seasons it is possible that they may not ultimately yield remunerative crops. On the other hand, in sheltered valleys inland and in damp localities free from prolonged droughts Cacao should do very well. Next to Coffee, fibres, Egyptian Cotton, and spices, I would regard Cacao or Chocolate as a most promising and reliable industry for West Africa if only the right soil and climate are found for it. Tea may be tried, and also Tobacco, but unless an expert is engaged to grow and prepare the produce there is no hope of establishing a permanent industry to supply European markets with either of these at present.

It may be very well worth while to try and establish the Ceara Rubber (*Manihot Glaziovii*) in West Africa. It has apparently established itself at the Gambia in very poor sandy soil and under very arid conditions. It requires little attention, and yields rubber at an early period. It very much resembles the Cassava plant in habit and requirements, and as the natives already cultivate the latter they would be likely to take very readily to the rubber plant. Seed of the Ceara rubber could be obtained in quantities from Ceylon.

The cultivation of fruits in West Africa might be greatly extended, if only for local demands. Pine Apples, Bananas, Guavas, Oranges, Limes, Mangoes, Bread-fruit, Custard Apple, Avocado Pear, Tamarind, Granadilla, Papaw, Water Melons, are already found growing at or near most of the Settlements. Little or no attention is, however, devoted to their systematic culture, and hence the yield and quality are below what they ought to be. It may be found ultimately practicable to export some of the fruits in a fresh or preserved state to this country. An account of West African fruits and the production of each at Sierra Leone, Gold Coast, and Lagos is given in the *Kew Bulletin* for October, 1888, pp. 221-224.

In reports which have reached Kew from West Africa considerable stress is laid upon the difficulty of keeping plants alive during the dry season. It is evident that a continuous supply of fresh water, easily accessible to nurseries and plantations, is of the highest importance. Water should be abundantly provided by means of small irrigation channels all over plantations in dry districts, with holes or wells here and there to facilitate watering any plants that require it. The saving in labour under such circumstances would be very considerable. Shelter trees should be planted, where they do not already exist, to protect the plantations from winds and to shade such plants as require it from the direct rays of the sun.

There are several species of Figs in West Africa that are admirably adapted to this purpose. Live fences made of such plants as Logwood and the Madras Thorn (*Inga dulcis*) would protect the plantations and afford some relief from dry winds. The Logwood is a tree of great promise for West Africa. Seeds of Logwood could easily be obtained from the West Indies, while seeds of the Madras Thorn might be got from Ceylon or India.

The question of soil should receive the most careful attention. A rich loamy soil of good depth, with good natural drainage and within easy reach of water, is most essential for cultivated areas. There should be considerable time spent over the selection of sites for plantations, and every point should be carefully considered before the site is ultimately settled.—D. MORRIS (in *Kew Bulletin* for September).

THE LIVING EARTH.

IN connection with the recent Congress at Brighton held by the Sanitary Institute, Dr. G. V. Poore, M.D., F.R.C.P., who is President of section I., presided over the meeting of that section, and delivered an address on "The Living Earth," the substance of which is given in the following paragraphs.

Sanitation in large cities is, at the best, a makeshift, and no high level of health is attainable in a place where the chief object of hygienists seems to be to enable persons to live as densely packed as possible. This prelude is necessary, because the remarks which I am about to make are addressed mainly to persons who live in the country, and who enjoy the luxury of elbow room, and I trust that what I am about to say will make them hesitate before they hastily copy the sanitary methods of the town, and heedlessly begin to foster overcrowding, the bane of all sanitary and social virtue. I say that my remarks are addressed to dwellers in the country, because I have taken for my subject the "Living Earth," a subject which those who live on paving stones, tarred blocks, asphalt, or macadam have to take upon trust. The "Living Earth!" Some of you may ask what I mean by this, and

whether I intend to apply the epithet "living" to the dark coloured inert mould which the countryman sees in the fields and gardens, and the town dweller finds in the flower pot which holds his struggling Geranium? My reply is, "Certainly." We have arrived of late years at a certain knowledge of the fact, that the mould which forms the upper stratum of the ground on which we live is teeming with life, and as this fact seems to me to be one of prime importance to sanitarians, I propose to bring some points in connection therewith before you this morning.

It has long been recognised by agriculturists that the upper stratum of the soil differs from that immediately below it in fertility; and in treatises on gardening (notably in that admirable work written by William Cobbett nearly seventy years since) the warning is invariably given to be careful, in trenching, not to bury the top spit of soil beneath the lower spit, because the top spit is by far the most fertile. The fertility in this case was supposed to be due to prolonged exposure to air, and the lower stratum of soil, if brought to the surface, would only become fertile after a considerable interval. It is interesting to observe that although these early writers were unacquainted with the whole truth they had grasped the most important fact, and their practice was sound. This is often the case, and I feel sure that we act rashly when we hastily abandon the custom of centuries, because some new fact dazzles us and distorts our vision. In connection with William Cobbett I will draw attention to a term which he uses more than once in the work referred to, viz., the fermentation of the soil. I have not found this expression employed by any other writer, but I have made no special search, and my knowledge of agricultural authors is limited. Cobbett tells us that the earth begins to ferment in the spring, and that before sowing a thorough tilling and mixing of the upper strata of the soil is very necessary, with a view not only to the disintegration of the soil, but to a thorough leavening of the whole mass with fermentible matter. There is no doubt that this term "fermentation," as applied to the soil, is perfectly apt, as we shall find further on. The black vegetable mould which lies upon the surface of the earth is largely composed of organic matter, which is not to be wondered at, seeing that every organised thing, whether animal or vegetable, which inhabits this globe falls, when dead, upon the earth, and becomes incorporated with it. Darwin, in his book on "Vegetable Mould and Earthworms," has forcibly drawn attention to the enormous amount of work which worms perform in the aggregate. How they disintegrate the soil. How they riddle it with burrows, which admit air to the deeper recesses of the soil. How their castings, which are incessantly being thrown off, tend to level inequalities, and gradually to bury stones or whatever dead inorganic matter is incapable of solution, digestion, or disintegration. Earthworms are found almost everywhere, and they are probably the most important of the animals which live in the soil; but I need scarcely say that there are many others, and everyone who has a garden must recognise the fact that gardening is only carried out at an enormous sacrifice of animal life, for with every thrust of the spade into rich garden mould a death blow is dealt to many of its inhabitants. The disintegration and aëration of the soil, which is effected by the quiet tillage of the earth-dwellers, is of the greatest importance to the agriculturist, for it is hardly conceivable that the delicate rootlets of plants could grow and extend unless the soil had been softened and pounded by the earthworms and their neighbours.

Although the amount of animal life in the earth is considerable, it is nothing compared with the richness of the soil in the lower forms of vegetable life. The dead and excremental matter becomes the food of saprophytic fungi, which abound in the soil to a very great extent. This must be the case, for we know that saprophytes and their allies abound everywhere, and as the surface of the earth is the common reservoir of all forms of life, it follows that these low vegetable microbes must be more abundant in the earth than elsewhere, and more abundant at the surface than deeper down. In Watson Cheyne's edition of Flüge's work on micro-organisms (New Sydenham Society, 1890), this is very clearly stated: "Enormous numbers of bacteria have always been found in the soil by the most various observers. Infusions made from manured field and garden earth, even though diluted 100 times, still contain thousands of bacteria in every drop, and the ordinary soil of streets and courts also shows the presence of large numbers. Bacilli are present in much the largest numbers; but in the most superficial layers and in moist ground there are also numerous forms of micro-cocci." These micro-organisms of the soil are very active in producing changes in organic matter added to the soil. These changes are usually in the direction of oxidation; occasionally the change is one of reduction. One thing is certain, that if the soil be sterilised by heat or other means it is no longer capable of producing any chemical change in organic matter. This seems to me to be a fact of prime importance to the sanitarian. The oxidation and nitrification of organic matter in the soil is a biological question, pure and simple. It is an effect produced by the living earth; a process analogous to fermentation, which Cobbett seems to have appreciated. Whether the nitrifying process which takes place in the soil is due to one or to many varieties of microbe is doubtful, but the latter supposition is probably correct, and experiments seem rather to point to the conclusion that, given favourable conditions—the free admission of air to a soil which is not unduly moistened—nitrification will go on. Many attempts have been made to isolate a nitrifying organism, and one of the latest, by Professor Percy Frankland and Grace Frankland, the results of which were communicated to the Royal Society in February 1890, appears to have been successful, for these observers isolated a "bacillo-coccus," the power of which in producing nitrification

appears to be most remarkable. Whether this bacillo-coccus is one of many having similar power, or whether it stands alone, is not known; but in any case we must regard it for the present as the "Nitrate King" among microbes. It has been asserted that fungi of a higher class, mould fungi, are also active in producing the disintegration and oxidation of organic matter in the soil. It is possible, however, that the *Bacillus mycoides*, which forms threads closely resembling mycelium, has been mistaken for mould fungus. The *Bacillus mycoides* is one of those which is constantly present, we are told, in garden soil. It has been conclusively shown by Flüge, Koch, and others, that the microbes are most abundant in the superficial layers of the soil, and that they tend to disappear in the deeper layers. They are practically absent in the deeper layers unless the earth has been deeply stirred or trenched, or unless sewer or cesspool has conducted filth to the deeper layers without touching the superficial ones. Numerous filtration experiments on a large and small scale have shown most distinctly that a layer of earth $\frac{1}{2}$ to 1 metre in thickness is an excellent filter for bacteria, and hence the purification of fluids from bacteria must be still more complete in cultivated, and especially in clay soil, and where the fluid moves with extreme slowness. Further, it has been repeatedly shown that wells which are well protected against contamination with bacteria from the surface and from the sides of the well furnish a water almost entirely free from bacteria; that, further, wells of water containing bacteria become the purer the more water is pumped out, and the more ground water comes in from the deeper layers of the soil.

The vegetable living mould on the surface of the earth is, in short, a filter of the most perfect kind. It is very rich in saprophytic bacteria, whereas the subsoil at a depth varying from 3 to 6 feet is barren of bacteria, as well as of other kinds of life. The subsoil is mineral, inorganic, and dead; the mould upon the surface is organic, and teems with life. Anything which is thrown upon the surface of the ground soon disappears. This is especially the case with water. The absorbing power of soil for water varies according to its mineral constitution. Loose sand and chalk absorb water very readily, and clay less readily; but the absorbing power of vegetable mould, or humus as it has been called, is infinitely greater. Humus is said to be able to absorb from 40 to 60 per cent. of water, and to hold it very tenaciously. This is from two to three times as much as the most porous dead mineral soil is capable of absorbing. We all know that in times of heavy rains it is infinitely rarely that we see water lying in pools on the surface of cultivated soil, whereas it soon collects on roadways and paths, which are made of dead mineral matter. The tenacity with which mould retains water is due to the fact that the water is absorbed into the interior of millions of vegetable cells, and is not merely held by capillary attraction in the interstices between small mineral particles. It is the swelling of individual cells which forms so effectual a barrier to the passage of bacteria. Not only water but everything else when thrown upon the soil disappears sooner or later. Such things as pieces of wood, or leather, about the toughest of organic materials, become softened and permeated by fungoid growth, and finally crumble away. In some parts of the country rags of all kinds are largely used for manure. Through the autumn and winter these may be seen lying on the surface, but when in spring the tilling of the land goes forward, and the fermentation of the soil commences, the coarsest of these rags disappear. If wood, leather and rags disappear, leaves and animal excrement disappear, as we all know, far more readily. The disintegration is forwarded by birds, insects, worms and their allies, until finally by the action of saprophytic fungi these organic matters become fertile "humus," which is the only permanent source of wealth in any country, the source whence we derive all the materials for our food and clothing.

The question whether among the bacteria which are found in the soil some may not be hurtful to mankind is a question of great interest and importance. If disease-causing organisms find their way into the soil may they not multiply, or at least continue to live, and then prove a danger to health? There can be no doubt that pathogenic organisms do exist in the soil, but their power for harm would seem to be practically very small indeed, and to regard the soil as dangerous because some pathogenic organisms may lurk in it would be about as rational as it would be to condemn vegetable food because of the occasional dangers of Hemlock, Aconite, or the deadly Nightshade. The workers of the soil, agricultural labourers and gardeners, are amongst the healthiest classes of the community, and that they are not credited with any diseases which are special to their calling. It seems to be a fact that the great doctrine of the survival of the fittest holds good for microbes in the soil as for all other organised things everywhere, and that organisms which flourish in the human body languish and cease to multiply in the soil where the conditions are unsuited for their multiplication or even for their survival. They get overgrown by saprophytic microbes, and even if they do not die the risk of their finding their way into the ground water is practically nil, for we have seen that humus is the best of filters.

Sanitation is purely an agricultural question, and in the country, where every cottage has, or should have, a patch of garden, there ought to be no difficulty in the daily removal of refuse from the house and in applying it to agricultural purposes, without any risk of contaminating the water supply. Given the patch of garden, the only thing necessary to bring about this, the only complete form of sanitation, is the will to do it—the will, that is, to do a profit to one's self without the possibility of damaging one's neighbour. This, unfortunately, is rarely forthcoming, in spite of the Christian religion and the Education Act, and we go on, even in country places, polluting our streams and wells, with

our minds agitated, as well they may be, as to when our water will become too poisonous to drink, and where we shall turn for a pure supply in the future. Sanitation is a purely agricultural and biological question. It is not an engineering question, and it is not a chemical question, and the more of engineering and chemistry we apply to sanitation the more difficult is the purifying agriculture. This, at least, has been the practical result in this country. The only engineering implements which the cottager with a bit of garden requires for the sanitation are a watering-pot and a spade, and if his garden be an allotment away from the cottage a wheelbarrow may become necessary. The cottager, to whom the produce of his bit of land is a matter of consequence, will endeavour to fertilise as much land as possible with the organic refuse at his disposal, and as long as this endeavour is made there need be no fear of failure, either from the agricultural or sanitary point of view. When, however, an engineer, by means of water under pressure, has collected the organic refuse of a province at one spot, has diluted it a thousandfold, and endeavours to submit it to a mock purification, by means of the least amount of land possible, failure is inevitable, both in the agricultural and sanitary sense. It was in 1848 that the advice to "drain" was tendered with a light heart by the pioneers of modern sanitation, who thought it would be an easy thing to purify the sewage and make a profit from it. The Thames, the Liffey, the Clyde, the Mersey, and the Irwell are a standing testimony to the failure of these great engineering schemes, and I would remind you that the last engineering scheme put forward with regard to the sewage of London—viz., to convey it all to the Essex coast and cast it into the sea—is not only a most lame and impotent conclusion, quite unanticipated by the pioneers of '48, but it is an experiment which, like our previous experiments, may be productive of unforeseen results.

(To be continued.)

HORTICULTURAL SHOWS.

ROYAL CALEDONIAN SOCIETY, EDINBURGH.

THE autumn Exhibition of the above Society was held on the 10th and 11th insts. in the Waverley Market, Prince's Street, and was in all respects a good show. Numerous exhibits came from trade growers and others, among which may be noted a group of autumn-flowering Lilies set up by Messrs. T. Methven & Sons, Prince's Street, a table of fair Tuberous Begonias from Messrs. Ireland & Thomson, Prince's Street, and another table of cut greenhouse plants and Carnations from Dickson and Co., Waterloo Place. The latter comprised their new rose variety Maggie Lawrie, W. M. Welsh, bright scarlet, but small as shown, and Caledonia, bright purple. Many groups of cut flowers were shown, Mr. Forbes, Hawick, contributing Phloxes, Pentstemons, Hollyhocks, Violas, and extra fine Tuberous Begonias. Messrs. Dobbie & Son, Rothesay, set up an extra fine group in which their new strain of Violas in bunches, African and French Marigolds, Asters and Dahlias were noticeable. Choice strains of Turnips and White and Red Celery were also shown by this firm.

Mr. Campbell of Gourrock had a stand of Gladioli, and Mr. Campbell, Auchenraith, in addition to a representative collection of Dahlias, Carnations, and Picotees, showed a new white Carnation, Mrs. Muir, in plants, wreaths, and crosses. A most interesting collection of hardy flowers was admirably staged by Messrs. Cocker & Sons, Aberdeen, who, in addition, had some stands of the very best Canations and Picotees in the Show, and a stand of Tea Roses in bunches, which furnished conclusive proof of the hardiness of these beautiful flowers. Fine border and Clove Carnations were contributed by Messrs. Laing & Mather, Kelso, a novelty in their arrangement being a miniature flower garden furnished with Carnations. Messrs. Lamont & Son, Musselburgh, staged some fine single Dahlias, of which they apparently make a specialty with much success. Ferns were contributed in beautiful order and in the greatest variety by Messrs. Birkenhead of Sale, Manchester. This was an exhibit of much value, bringing before the gardening public as it did all the best forms of this interesting family. Some noteworthy examples of high culture in vegetables, flowers, and fruit were brought together in a large stand belonging to Messrs. A. Cross & Son, 19, Hope Street, Glasgow. These were intended to illustrate the qualities of a manure they are producing for horticultural purposes. Specially fine Onions, comprising Cocoa Nut, Ailsa Craig, Anglo-Spanish, Rousham Park, and others, were contributed by Mr. J. Wilkins, Inwood House, Blandford.

Of the Show proper the cut flowers and fruit nearly equally divided the interest of the visitors. The former are year by year assuming a position of greater importance in the northern capital, and a little more money judiciously spent by the Society would give an increased impetus. Of the latter, Grapes and Apples were represented in the greatest numbers. Pears were also well shown, but Peaches, Nectarines, Piums, and small fruits were not numerous.

Taking the collections of fruit first, five were staged for the prizes offered for twelve dishes, Mr. McKinnon, Melville Castle Gardens, Lasswade, securing first place with extra good Grapes, comprising three excellent bunches of Alicante, two of good Muscat of Alexandria, extra Gros Maroc, and fair Black Hamburg. Fine Souvenir du Congrès Pears, Kirke's Plums, and Gascoigne's Scarlet Apples were the most noteworthy of the other dishes. The second place was secured by Mr. McIndoe, Hutton Hall Gardens, Yorks, with Gros Maroc, Gros Guillaume, and Alnwick Seedling Grapes, fine Pitmaston Duchess Pears, and good Exquisite Peaches. Among other dishes Mr. Hunter, Lambton

Castle Gardens, Durham, was third. Seven competed in the class for eight dishes, Mr. McIndoe being first with a Pine Apple, white and black Grapes, fine Pears, Duke Constantine Apples, Peaches, Nectarines, and Plums. Mr. McKelvie, Broxmouth Park, Dunbar, was second, and Mr. Murray, Culzean Castle, Ayr, third. The collection of twelve sorts hardy fruits brought six competitors, Mr. Day, gardener to S. Massey, Esq., Galloway House, being first, fine Castle Kennedy Figs, good Bon Chrétien Pears and Peaches being the chief dishes. Mr. Murray, Ahercairn, was second and Mr. Dow Newhyth, Prestonkirk, third. For twelve dishes orchard house fruit Mr. McIndoe had the first place, very fine being Peasgood's Nonesuch and Alexander Apples, Clapp's Favourite Pear, Lemons, and Peaches. Mr. Hunter was second and Mr. McKinnon third.

The Grape classes were well filled, though the general quality was perhaps below that of late years. For six bunches Mr. McHattie, gardener to the Marquis of Lothian, Newhattle, Dalkeith, secured first place with extra fine Muscat of Alexandria, good Lady Downe's and Black Hamburg, all large and well finished clusters; Mr. Murray, Polmont, second with large examples of Alnwick Seedling and Muscat of Alexandria; Mr. Murray, Culzean, third. In the four-bunch class Mr. McKinnon was first with extra good Gros Maroc and Alicante, good Muscat of Alexandria and Mrs. Pince; Mr. Kirk, Norwood, Alloa, second with extra fine Gros Colman, Gros Maroc and Alicante, and Mr. D. Murray third. Mr. McHattie secured the first prizes for two bunches of Muscat of Alexandria and two of Black Hamburg, with in each case extra fine examples. Mr. Day being second for the former, and Mr. S. Paterson, Langholm, second for the latter. In the classes for single bunches Mr. W. G. Pirie, Sunderland House, Selkirk, had the finest Muscat of Alexandria, and Mr. Leslie, Pitcullen House, Perth, second. Mr. Kirk in a good class secured first for Black Hamburg, Mr. Watson, Stirling, second, each with fine examples. The best Alicante was set up by Mr. McKinnon. Mr. Caldwell, Langholm, was second. A good example of Alnwick Seedling from Mr. Murray, Polmont, secured first for this Grape; Mr. Bell, Alnwick, being second. Mr. Kirk secured first for Gros Colman with a beautifully finished cluster, and Mr. W. Murray second. For Lady Downe's Mr. Caldwell was doubtfully first, Mr. W. Murray second with what appeared to be a better bunch. Mr. Day had the best Gros Maroc in any variety class, and Mr. McKinnon with fine Golden Hamburg had first in the corresponding class for white Grapes. Mr. McIndoe had the best flavoured black Grapes and Mr. McKelvie the best flavoured white, the bunch with finest bloom being from Mr. Day.

Mr. McIndoe secured first prizes for one Queen Pine Apple, one Smooth Cayenne, and for two Pine Apples; Mr. Kirk second for the Queen, and Mr. Ramsay third. Figs were poor, as also Peaches and Nectarines; a fine dish of Salwey Peach being the noteworthy exception. Plums were generally good, the best collection coming from Mr. McIndoe, and comprising fine examples of Magnum Bonum (white), Jefferson, Bryanston Gage, Pond's, Kirke's, Monarch, Belgian Purple, and Prince Englebert; Mr. Hunter second. Pears were fairly numerous, but generally small. Mr. Day had the best six varieties; Mr. Henderson, Hafield, second; and Mr. D. Murray third.

Mr. D. Murray secured first place for collection of twelve sorts Apples; Mr. Brotherston, Tynningham, Prestonkirk, second; and Mr. Cocks, Spalding, third. Many of the newer varieties were represented in these and the other collections shown. In the single dishes the competition was very good, fine dishes of Warner's King, Ecklinville Seedling, Stirling Castle, Ribston Pippin, and Lord Suffield being numerous and noticeable.

Of plants the chief items in the schedule were the groups or tables, one for nurserymen the other for gardeners. The former were represented by Messrs. R. B. Laird & Son, Pinkhill, Corstorphine, who set up a hold oval group, the conspicuous feature being some grand plants of Madame Desgrange Chrysanthemums with large blooms. Good Palms, Crotons, and other decorative plants were used with good effect, and the first prize was secured with this; Messrs. Ireland & Thomson were second. In the gardeners' classes two competitors also staged, Mr. Grossart, gardener to J. Buchanan, Esq., Oswald Road, being first with a bright table; and Mr. McIntyre, Darlington, second with a group much too carelessly arranged, the plants being remarkable for high-class cultivation. Stove and greenhouse plants were not numerous but good; for six in flower Mr. Morris, Newcastle, and Mr. Patterson, Millbank, having a sharp contest, but the former had to give way to the veteran Scottish plant grower. Mr. Crichton, Liberton, had the best three flowering plants; and Mr. Patterson and Mr. Morris were again first and second for one plant respectively. For three and for one Cape Heath Mr. Patterson was also successful in securing first prizes. Mr. Tindley, 14, Osborne Terrace, had the best four Orchids, of which a good Vanda tricolor and a V. suavis were the best plants; Mr. Currer, Eskbank, was second; and Mr. Grossart third. For two Orchids Mr. Patterson was first; and for one Orchid Mr. Grossart.

The Fern classes brought out some grand examples, the first prize six from Mr. Niel Fraser, Murrayfield, being particularly good, and comprising a grand example of *Goniophlebium appendiculatum*, *G. glaucophyllum*, *Phlebodium aureum*, *Davallia dissecta*, *Gymnogramma lauchiana*, and *Microlepia hirta cristata*. Mr. Grossart was a good second, and Mr. Crichton third. Mr. Fraser had also the best four Adiantums, while Mr. Patterson secured first with three *Gleichenias*. The first prize for Filmy and for hardy Ferns was also secured by Mr. Fraser, and that for the best Tree Fern by Mr. Laing. For the various class of foliage plants there was good competition, Mr. McIntyre,

Darlington, being first for four foliage and two Crotons. Mr. J. Patterson had the best Caladiums and six Palms, Mr. Grossart the best four and single Palm, and Mr. Cummins the best three *Dracenas*. In the trade classes Messrs. R. B. Laird & Sons were first for Palms, foliage plants, and Chrysanthemums, and Messrs. Dickson & Sons, Hanover Street, had the best collection of Conifers.

Of cut flowers there was a very good display, the competition in many cases being extremely keen. Of *Gladiolus* there were over a dozen stands, Messrs. Stuart & Mein, Kelso, being the only exhibitors in the trade class for thirty spikes, and received the first prize. In the gardeners' class for twelve spikes eight stands were forward, Mr. Whitelaw, Brechin, being first, Mr. Brotherston second, and Mr. Braydon, Innerleithen, third. Mr. Smith, Prestwick, Ayr, also showed well. In the six class were five stands Mr. Cockburn, Tynningham, being first, Mr. Dickson, Glenormister, second, and Mr. Veitch, Carlisle, third. Grand examples were shown in the various stands of the following sorts:—Grand Rouge, Bicolore, La Vesuve, Enchantresse, De Mirhel, Marie Mies, Archduchess, M. Christine, Beatrix, Baroness Burdett-Coutts, Dalila, Amitié, Horace Vernet, Crépuscule, Arrière-Garde, and Meyerbeer. Dahlias were a striking show, most admirably grown examples being staged, Mr. Walker being first for twenty-four Show, and Mr. Campbell, Auchencraigh, second; and Mr. Campbell first for twelve Fancy varieties, and Messrs. R. B. Laird & Sons second. In the gardeners' class for twenty-four varieties Mr. Spoor, Gateshead, Newcastle, was first, and Mr. Pearson, Beechwood, second; and for twelve blooms Mr. Spoor was again first, and Mr. Veitch, Carlisle, second, grand examples of W. Rawlings, R. J. Rawlins, Earl of Ravensworth, Mrs. Gladstone, Crimson King, Clara, Champion Rollo, Peacock, H. Keith, Mrs. Langtry, and Willie Garrett were very noteworthy. Messrs. Lamont & Sons, Musselburgh, had the best single Dahlias. R. B. Laird & Sons were second, and Mr. Walker, Gateshead, third. Roses again were especially fine, and in the nurserymen's classes Messrs. Cocker & Sons, Aherdeen, easily took first in each class—viz., for thirty-six, eighteen, and twelve. Messrs. Smith, Stranraer, and Hugh Dickson, Belfast, were the other successful growers, Messrs. Croll, Dundee, showing fine Tea Roses. Especially fine were Her Majesty Mrs. J. Laing, White Lady, Charles Lefebvre, Sénateur Vaisse, Ulrich Brunner, Marshall P. Wilder, Merveille de Lyon, and Eugène Verdier. In gardeners' section Mr. Ramage, Wallhouse, was first for twenty-four; Mr. Wallace, Rothesay, second, and Mr. Parlane, Roselea, third; Mr. Archibald, Broughty Ferry, being first for twelve varieties and also for twelve Tea Roses. There was strong competition for Carnations and Picotees, but the blooms were mostly small. Madame Desgrange Chrysanthemums in white and yellow were excellently shown, Mr. Rushton, Corstorphine, taking first with a grand dozen. Hardy flowers were largely shown, but there was nothing noteworthy among them. Annuals were good. Bouquets, buttonholes, sprays, &c., were also well shown and very pretty.

Vegetables were, of course, good, but not so large a competition as last year, the collections being less numerous. The first prize for twelve dishes went to Mr. Richardson, Perth; second to Mr. S. Bigham, Edgerton; third to Mr. Johnston, Hawick. Mr. P. Robertson, Hartrigge, Jedburgh, had the best six dishes; Mr. Hall, Kelso, second, and Mr. Ormiston, Jedburgh, third. Celery, Leeks, Onions, Peas, and Cauliflowers were the outstanding dishes of greatest merit. In the classes for different vegetables grand Leeks, Celery, Onions, Lettuces, Cauliflowers, Peas, Tomatoes, and Parsnips were very noteworthy. There was also a fair display of honey. The weather was of the finest, and the Show well patronised both days.

MANCHESTER BOTANICAL AND HORTICULTURAL SOCIETY. SEPTEMBER 12TH AND 13TH.

THE usual Exhibition of fruit and flowers took place in the Botanical Gardens on the above dates, and, favoured by beautiful weather, there was a large attendance. It was an exceedingly good Show throughout, and the contest in the class for eight bunches of Grapes, added to the superb culinary and dessert Apples shown by Mr. Samuel Barlow, J.P., were the most striking features. The grand Roses shown from Bedale were remarkably good for the season of the year, and the names of the varieties shown may be taken as representing some good autumnal bloomers.

Grapes.—The great point of interest in the Exhibition was the class for the best collection of eight bunches of Grapes in four kinds, the handsome first prize of fifteen guineas being given by Messrs. Thomson and Sons, Clovenfords. There were eleven competitors, and the Judges were occupied nearly an hour in making the awards. Eventually Mr. Taylor, gardener to Mr. Alderman Chaffin, Bath, was placed first with two bunches each of Muscat of Alexandria, Madresfield Court, Black Hamburg, and Alnwick Seedling. Second, Mr. W. Allan, gardener to the Earl of Suffield, Gunton Park, Norwich, who had two bunches each of Duke of Buccleuch, Alnwick Seedling, Alicante, and Gros Maroc. Equal third Mr. McHattie, gardener to the Marquis of Lothian, Dalkeith, who had three bunches of Muscat of Alexandria, two of Lady Downe's, two of Black Hamburg, and one of Madresfield Court; and equal third Mr. Goodacre, gardener to the Earl of Harrington, Elvaston, Derby, who had, like Mr. McHattie, three bunches of Muscat of Alexandria, two of Alicante, two of Madresfield Court, and one of Muscat Hamburg. The judgment in this class was much criticised, and some thought Mr. McHattie ought to have been placed first. We think—having regarded that his bunches were much too crowded and the majority of the berries small, Lady Downe's particularly so—that he was in his proper place, and that Mr. Allan's collection ran that of

Mr. Alderman Chaffin very close. What weakened the collection of the former was the fact that he had no representative of our three high class Grapes—Muscat of Alexandria, Black Hamburgh, and Madresfield Court. His two bunches of Duke of Buccleuch were very fine in bunch and berry, but yet lacking colour; his Alicantes were very fine in bunch; his Alnwick Seedling superb. Still, the collection lacked high class quality as far as the dessert table is concerned. The best two bunches of any black Grape were finely finished Black Hamburgh from Mr. McHattie, though small in berry. Mr. F. H. Gossage, Woolton, Liverpool, was second with Madresfield Court, and R. H. C. Nevill, Esq., Grantham, third with Alicante. The best two bunches of any white Grape were Muscat of Alexandria, finely finished, from Mr. Alderman Chaffin, W. B. Davenport, Esq., coming second with the same, and Mr. McHattie third.

Collections of fruit in eight dishes came from four exhibitors. The best from Mr. Goodacre, who had fine Muscat of Alexandria and Gros Maroc Grapes, Barrington Peaches, Victoria Nectarines, Ischia Figs, Powell's Late Apricot, a good Queen Pine, and Read's Scarlet-fleshed Melon. Mr. Wallis, gardener to the Rev. W. Sneyd, Keele Hall, Staffs, was second with the same varieties of Grapes, very fine Sea Eagle Peaches, Pitmaston Orange Nectarines, Moor Park Apricots, Transparent Gage Plums, white Ischia Fig, and Queen Pine. Third, Mr. Dawes, gardener to the Hon. Mrs. Meynell-Ingram, Temple Newsam.

The best dish of eight Peaches was that of Barrington, very fine indeed, from Mr. Wallis; Mr. George Meakin, Stafford, coming second with fine Royal George. The best dish of Nectarines was that from Mr. Lambert, gardener to Colonel Wingfield, Shrewsbury; Mr. Goodacre was second with Violette Hâtive; and Mr. W. Brocklehurst, Macclesfield, third with Pineapple. The finest fruit of a Pine was a Queen from Colonel Dixon, Astle Park, Chelford; R. H. C. Nevill, Esq., Grantham, with the same; the third prize going to a well coloured Charlotte Rothschild from Mr. Dawes. The best flowered scarlet-fleshed Melon was Read's from Mr. Goodacre; Miss Lord, Ashton-on-Mersey, coming second with a scarlet seedling. The best white flesh was Hero of Lockinge from Mr. Goodacre; Mr. Hunter, Lambton Castle Gardens, coming second with Best of All. Mr. Allan brought from Gunton the best dish of Plums, having fine Pond's Seeding; Mr. Hunter coming second with Magnum Bonum; and Mr. Wallis third with Kirke's.

The best three dishes of Pears grown under glass came from Lambton Castle, and consisted of very fine Beurré Diel, Pitmaston Duchess, and Souvenir de Congrès. Second, Mr. Goodacre, with very good Beurré Superfin, Doyenné du Comice, and Souvenir de Congrès. Mr. Samuel Barlow, J.P., Stakehill House, Manchester, came third with very finely coloured Doyenné Boussoch, unfortunately overripe, very fine Louise Bonne of Jersey, and Pitmaston Duchess. The best three varieties grown in the open air were Beurré de l'Assomption, Bon Chrétien, and Brockworth Park, fine—Mr. R. H. C. Nevill. Mr. Allan was second with Marie Louise d'Uccle, Durondeau, and Doyenné Boussoch. Third, Mr. Samuel Barlow, with fine Windsor, Pitmaston Duchess, and Beurré Diel.

There were eight collections of twelve dishes of culinary Apples, and Mr. Samuel Barlow was first with some very fine examples grown in his garden at Shimala Hir, Llandudno, and only just inferior, if indeed that, to the superb collection shown by Messrs. G. Bunyard & Co. of Maidstone at the Crystal Palace the previous week. They consisted of Gloria Mundi, very fine indeed; Frogmore Prolific, Peasgood's Nonesuch, very fine; Cat's Head, Potts' Seedling, New Hawthornden, Stirling Castle, Gravenstein, very fine in colour, and of good size; Golden Noble, Cox's Pomona, Blenheim Orange, and The Queen, very fine. Second, Mr. T. W. Baker, Gorrudinog, Llanfairfechan, with very fine Peasgood's Nonesuch, Mère de Ménage, Lord Suffield, Lady Henniker, Warner's King, Grenadier, Blenheim Orange, &c. Mr. C. L. Campbell, Ross, with a very good lot indeed, that appeared to deserve the second prize, but the Judges no doubt had good reasons for preferring the other collection. With eight dishes of dessert Apples Mr. Barlow was again first with superior examples of Margil, Washington, Herefordshire Beaufin, Worcester Pearmain, Ribston Pippin, very fine; Fearn's Pippin, very fine; and Duchess of Oldenburg. Second, Mr. C. L. Campbell, with Pineapple Russet; Worcester Pearmain, very fine; King of Pippins, Cellini, White Transparent, &c. Third, Mr. R. H. C. Nevill. Cherries were represented by Morellos. Mr. Goodacre was first with very fine fruit indeed. Mr. Lambert took the second prize.

Collections of vegetables in twelve varieties were a very fine feature. Mr. Lambert was first with a remarkably good collection, consisting of Autumn Giant Cauliflower, Major Clark's Celery, Perfection Tomato, Ailsa Craig Onion, very perfect Snowball Turnip, Lockie's Perfection Cucumber, Ne Plus Ultra Runner Bean, &c. Second, Colonel Cornwallis West (Mr. P. Ruthin), with a very fine lot also. Mr. Jas. Watt, Cheadle, was third. The best Tomatoes were all of the Perfection type, large and well coloured fruit. Mr. Jas. Mason, Manchester, was first, and Mr. J. F. Campbell, Uttoxeter, second. Cucumbers were represented by Lockie's Perfection. Here Mr. J. Mason was again first, and Mr. J. Grant Morris, Liverpool, second.

Cut flowers were represented by Dahlias, Roses, Gladioli, &c. The best twenty-four Dahlias came from Mr. W. Walker, Newcastle-on-Tyne. Mr. Thos. Painter, Stoke-upon-Trent, was second; and Mr. C. Hockney, Stokesley, third. The northern cultivators for exhibition appear to cut their flowers too far advanced, and in making the awards the Judges have to discriminate not so much as between the best, but the worst. Open centres are a common fault, and deficient backs. Mr. Painter

certainly had the largest and boldest looking flowers, but on close inspection many of them were found to be defective.

Collections of hardy cut flowers, unlimited in extent, made a very fine display, and Messrs. Harkness & Son, nurserymen, Bedale, were placed first with a superb collection of fifty-four large bunches, generally of fine quality, consisting of Lilium trigynum splendens, very fine Tigridia pavonia, conchiflora and alba; Scabiosa caucasica, brilliantly coloured; Gladiolus in variety, especially Lemoine's hybrids; fine Phloxes, Iceland Poppies in variety, Tritoma Uvaria, single and double Pyrethrums. Second Messrs. Dicksons (Limited), Chester, with a large and very interesting collection, comprising various Montbretias, Tritonias, Tritomas, Gladioli, Lilies, hybrid Gladioli, Colchicum speciosus, Papaver bracteatum, &c. Third Mr. Samuel Barlow, who had several very fine and striking varieties of Lemoine's Gladioli, Carnations and Picotees, Asters, Pansies, &c. Collections of cut Roses were a very fine feature also, and Messrs. Harkness & Sons were first here also with a superb collection for the season of the year, including a box of twenty-four blooms of H.P. Mrs. John Laing of great beauty, also fine blooms of The Bride, Madame Alphonse Lavallée, Duc de Rohan, Dr. Andry, Madame Chas. Crapelet, Beauty of Waltham, Countess of Oxford, Star of Waltham, Marie Verdier, Général Jacqueminot, Alfred Colomb, Crown Prince, &c. Second Messrs. Dicksons (Limited) with a very good collection also. The best collection shown by amateurs came from Dr. S. P. Budd, Bath, who had very fine blooms of Duchess of Bedford, Jean Ducher, Comte de Raimbaud, Madame Cusin (finely coloured), M. P. Wilder, Charles Lefebvre, Fisher Holmes, Madame Lambard, Louis Van Houtte, Victor Hugo, Francisca Kruger, Grand Mogul, &c. Second Mr. A. Whitton, Bedale. Third Mr. Samuel Barlow.

The best collection of forty-eight spikes of Gladioli came from Mr. Smith, Prestwick, Ayr, which contained some very fine spikes, but none named. Mr. S. Barlow was second with a good collection also, but unnamed. The best collection of twenty-four spikes was shown by Mr. A. Whitton, this included fine examples of Baroness Burdett Coutts, Orphir, Ondine, Gigantea, Le Phare, Horace, Grande Rouge, &c. Second Mr. S. Barlow. Third Mr. R. G. Burgess, Knutsford. Mr. A. Whitton had the best collection of cut blooms in bunches of early flowering Chrysanthemums, fine plants growing in the open; and Mr. Samuel Barlow was second. Both staged about fifty bunches, but unnamed, still the collections were of a very interesting character.

Show and Fancy Pansies in twelves came from several growers; a stand of twelve of the former from Mr. Thomas Fitton, Castleton, were very correct, and Messrs. Harkness & Son were second; the latter had the best twelve Fancy Pansies, Mr. R. G. Burgess was second. Collections of stove and greenhouse cut flowers were a very attractive feature. Mr. F. H. Gossage was placed first with a very fine and varied collection, including Eucharis amazonica, Miltonia vexillarium, Bougainvillea glabra, Anthurium Andreanum, Allamanda grandiflora and nobilis, Lapagerias rosea and alba, Vallota purpurea, Lycaste cruenta. Second, Mr. Thomas Barnes, Chirk, with a fine lot also, and unlike the foregoing, shown in handsome bunches; it included Allamanda nobilis, Hendersoni and grandiflora, Ixora Williamsi, Erica Marnockiana, Stephanotis grandiflora, Billbergia rhodocyanea, Dipladenia Brearleyana, &c. Third, Miss Lord, Ashton-on-Mersey. The best collection of Orchids came from Mr. P. Blair, gardener to His Grace the Duke of Sutherland, Trentham, a very fine lot unnamed, but consisting of Cattleyas, Miltonias, Vandas, Odontoglossums, Cypripediums, Lælias, Calanthes, Oncidium, Masdevallias, &c. Second, Mr. Thomas Statter, Stand, Whitefields, Manchester, with an excellent collection of similar character.

Messrs. Perkins & Sons, Coventry, had the best two bouquets, Mr. P. Blair being second. Messrs. Perkins & Sons also had the best two bouquets of Roses. Miss Lord was second. It may be remarked that the bouquets became the property of the Council, who sent them to the hospitals. The best stand for the dinner table came from Miss Lord. Mr. J. Brown of Heaton Mersey was second.

Among miscellaneous contributions was a large and interesting collection of culinary and dessert Apples from Messrs. Dickson, Brown, and Tait, seed merchants of Manchester, which included fine examples of Warner's King, Lord Suffield, Emperor Alexander, extra fine; Manks Codlin, Stirling Castle, Ringer, Potts' Seedling, Lord Grosvenor, Ecklinville Seedling, Keswick Codlin, Peasgood's Nonesuch, Lord Clyde, Dumelow's Seedling, a pretty soft early Apple named Grand Sultan, &c., together with a large collection also of Dahlias, Gladioli, African Marigolds, hardy flowers of various kinds, some fine Potatoes, a bloom of a finely marked Lilium auratum rubro-vittatum, &c. From Messrs. W. G. Caldwell & Son, nurserymen, Knutsford, cut Dahlias of various types. From Mr. John Robson, nurseryman, Altrincham, several boxes of cut blooms of Pompon, single, and Cactus Dahlias. From Messrs. Dickson & Robinson, seedsmen, Manchester, came Gladiolus, Dahlias, Roses, Marigolds French and African, hardy cut flowers, Tomatoes, &c. From Mr. A. J. Bruce, Sale, came a collection of Palms, Ferns, and Zonal Pelargoniums. From Messrs. Clibran & Son, nurserymen, Altrincham, a very fine strain of cut blooms of Tuberous-rooted Begonias, hardy flowers, and various insecticides. From Mr. R. H. Poynter, seedsman, Taunton, spikes of Gladioli. From Messrs. Ryder and Son, nurserymen, Sale, a large assortment of single, bouquet, and decorative Dahlias in bunches, and cut blooms of the beautiful white Mignon Aster, awarded a first class certificate of merit for its purity and superb finish.

A first-class commendation was awarded to Mr. T. Statter, Stand Hall, Manchester, for a fine bunch each of Muscat of Alexandria and

Madresfield Court Grapes. A white seedling Show Dahlia, named Ivory White, from W. R. Shakeshaft, Lymm, of a promising character was commended. A semi-double brilliant scarlet Dahlia, named John Burn, from Messrs. Harkness & Son, nurserymen, Bedale, was highly commended as a decorative border variety.

M. W. D. Bason, Town Wills Fold, Wolverhampton, exhibited his new Milltrack Mushroom spawn, which has acquired a great reputation in the north and midland districts, and Messrs. Dickson, Brown, and Tait McDougall's Self-acting Tobacco Sheets, which consist of cellulose saturated with tobacco extract of standard strength, and so prepared that they will fume or smoulder when a lighted match is applied.

CHIPPENHAM.

THIS Show was held recently in the beautiful grounds of Hardenhuish Park. The chief features were not so much the exhibits of nurserymen and professional gardeners, of which, however, there was a very fair display, as the unusual excellence of the cottagers' exhibits, which were displayed in a large tent quite distinct from the rest, a provision which afforded a pleasing contrast to that of many shows where the cottagers' productions are too often to be seen either exposed to the full glare and shrivelling influence of the sun without any protection whatever, or crowded together under a tree in some out-of-the-way place, where the visitors cannot see them properly.

This tent was not only well filled with vegetables, fruit, plants, and cut flowers, but each exhibit was so much above the general average of cottagers' productions that to me, who am not accustomed to cottagers' shows, it was an agreeable surprise. Not only did the exhibits consist of the best kinds, but they were set up in a trim and businesslike manner, plainly showing great care and deep interest on the part of the exhibitors. The fruit—which with cottagers generally means a few dishes of Apples, Gooseberries, and Currants—was here represented by really good collections and single dishes, comprising Apricots, Cherries, Green Gages, Pears, Melons, and Grapes, in addition to the commoner kinds. The plants were also very creditable, showing such health and vigour as is seldom seen amongst cottagers' exhibits. As to the cut flowers, which consisted chiefly of Asters, Dahlias, Marigolds, Roses, Stocks, and Zinnias, they were exceptionally fine, the Zinnias and Marigolds being unusually large, perfect in shape, and most brilliant in colour. I was so favourably impressed with these exhibits as to be induced to inquire what were the special causes which contributed to such good results, and I found that one of the causes was undoubtedly the capital list of prizes offered for competition, also the excellent provision made for the exhibits, and to the careful consideration shown by the Committee. There was to be seen amongst the exhibitors a keen spirit of rivalry and a businesslike professional method seldom witnessed amongst cottagers.

I was also informed that the most successful had now invested not only in glass frames, but also in miniature greenhouses, and the possession of these of course accounted for the presence of such flowers as *Lapageria alba*, *Liliums*, and other uncommon flowers in some of their bouquets. One other cause, I was informed, contributed in no small degree to their success—viz., the general adoption and utility of the earth closet system in the district, also the care exercised in saving and judiciously utilising the household slops and refuse, which are too often thrown away as worthless. The earth closet is so simple and economical in construction, and its contents are so valuable in the garden, that the only wonder, in this sanitary age, is that it is not more generally and more freely provided, especially where in those towns and villages which, from their flat position, or other causes, good drainage is almost impracticable; and also, because in numerous cases the cottager, for sanitary reasons, is now prevented keeping that most liberal manure producer, and most useful animal, the pig. Whether or not the cottagers of the Chippenham district would, if asked, attribute their proficiency in horticulture chiefly to the judicious use of the contents of the earth closet, would be interesting to know.

The Chinese, who are clever and very successful gardeners, are great believers in this system, and depend largely upon it for the supply of manure used in their gardens; indeed, so much do they value it, that it is said they look more favourably on the visitor who makes a discreet use of it before he takes his departure.

Some persons say that to adopt this system would be taking a backward and insidious step, but the former objection is not a forcible argument against its use, because, as time passes, we do occasionally find such a step advantageous, even in horticulture; and as to the latter objection, it can only apply when the system is improperly or indifferently carried out. Whether or not the proficiency of the cottagers of the Chippenham district be chiefly due to this cause, or to any other yet unexplained, I beg to congratulate them on the best all-round cottagers' show I have seen this season.—T. CHALLIS.

GLOBE ARTICHOKE.—These have been plentiful, but most of them are now over. There are some more forming, and if properly treated these may be useful in October or probably in November. In cutting the heads they are generally taken off at the top of the stem, and the stumps are allowed to remain full length. The whole of these should be cut over close to the ground, all decayed leaves being removed at the same time, and the young heads will soon show how much they have benefited by it.—M.



FRUIT FORCING.

PEACHES AND NECTARINES.—*Houses to be Started at the New Year.*—The trees will be shedding some of the leaves, but they must not have them brushed off with a broom as sometimes occurs to save trouble in clearing up the leaves as they fall naturally, which they must be allowed to do. If the trees are weakly from continued forcing and continued full crops of fruit, they may have, the border being properly drained, a good supply of liquid manure, which will assist the trees in keeping the buds, and to some extent invigorate them by inducing root action and a good start at the proper time. If, on the other hand, the trees do not set and stone the fruit satisfactorily, they should be lifted. This must be done carefully, preserving all the roots practicable, and keeping them as much as possible from the drying influence of the atmosphere. The drainage must be seen to, and if necessary rectified, putting in fresh drains, which, to be of use, must have proper fall and outlet, and providing clean rubble for drainage, with sweet soil for planting in. If a thorough renovation of the border has to be made the lifting must not be attempted until most of the leaves have fallen, as it will necessitate the trees being kept out of the soil some time; but they should have their roots damped and covered with moist mats, and the trees should be shaded and occasionally sprinkled with water from a syringe. Cut away any long bare roots, and shorten back or pare the ends smooth of those damaged in lifting to sound parts, laying them in the fresh compost evenly, with soil worked into their interstices, keeping them well up to the surface and making it firm. It is no use attempting to grow Peaches and Nectarines in loose soil; firm wood is the outcome of firm soil, and fruitfulness resultant of aliment steadily furnished for elaboration and storing in the fruit, wood, and buds for future crops. Afford a good watering after lifting, and when settled mulch with a few inches thickness of rather short stable manure. The trees being sprinkled occasionally for a few days will keep sound in the wood, and roots will be pushed more or less into the fresh soil, which usually is a great incentive of root action. The most unsatisfactory trees carefully lifted and replanted in properly drained borders of suitable material never fail to fruit satisfactorily under proper management in light and well ventilated structures.

Lifting in Succession Houses.—When the growth is too free, the crops not being satisfactory, the trees should be root-pruned or lifted as soon as the foliage shows indications of falling. If judiciously performed this will check their vigour and induce short-jointed fruitful wood. Any lifting or root-pruning should be performed before the leaves fall, affording a good watering afterwards, mulching with a couple of inches thickness of short manure, and syringing the trees each evening for a few days. The trees will soon produce young active feeders.

Late Houses.—The weather is all that could be desired to insure the perfect finish of those very fine varieties—Barrington, Princess of Wales, Sea Eagle, the finest of all late Peaches; Gladstone, Walburton Admirable, Nectarine Peach, Lady Palmerston, and Comet. These are unsurpassed in appearance by any of the early and midseason varieties, and properly fed and duly ventilated they are juicy and full-flavoured. They are now ripening the fruit in houses that have been freely ventilated, well watered at the roots through a mulching of lumpy manure, and the foliage kept clean and healthy by forcible syringings. The trees should now have the benefit of a free circulation of air, utilising sun heat by keeping the ventilators closer than usual, as with ventilation in the early part of the day the temperature may be allowed to run up to 80° or 85°, which will do more to ripen the fruit and wood than sharp firing in dull weather. A somewhat drier condition at the roots is desirable when the fruit is ripening, but they must not be allowed to suffer from want of water so as to affect the foliage, and though the trees are not to be syringed, an occasional damping of the floors will greatly tend to keep the foliage in health. In dull wet weather a gentle warmth in the pipes will be serviceable in securing a genial warmth and allowing of a circulation of air.

Unheated Houses.—The late varieties before mentioned ripen perfectly in these structures when they are given a good aspect and the climate is not unfavourable or the location high and cold. Means of affording warmth in spring to insure a good set, and in autumn to perfect the fruit and mature the wood, are necessities in cold damp late situations to have the late Peaches in perfection, than which there is no finer ornament for dessert, irrespective of their particular flavour in the autumn months; but in a majority of locations the late Peaches ripen well in unheated houses, we having had Sea Eagle first-rate up to the middle of October. Induce ripening by a somewhat dry atmosphere. Make the most of sun heat by allowing a considerable advance under its influence, closing early, but putting on a little top ventilation before night. Keep the wood thin, cutting away any gross growth, and shorten any sappy shoots to 12 or 15 inches, and keep all laterals closely pinched to one joint.

MELONS.—The latest plants having been stopped when they extended two-thirds across the trellis are well up it. There is no better system for houses than the single cordon—viz., the plants have all the

laterals rubbed off up to the height of the trellis, and then every alternate lateral on opposite sides of the primary, stopping it when two-thirds across the trellis. The laterals show fruit blossoms at the second or third joint, if not the laterals are pinched at the second joint, relying on the sub-laterals for the show of fruit. If the plants are weak and there is no hurry for the fruit remove all staminate and pistillate flowers on the laterals, stopping at the second or third joint, waiting for fruit on the tertiary growths or sub-laterals, which is an advisable plan where time is not a consideration, and a full crop and larger fruit is desired. By a little contrivance both systems may be had in the same house, which gives a longer succession of fruit—*i.e.*, plants allowed to fruit on the first laterals; those give from two to four fruit on a plant, and those that fruit on the second lateral or sub-laterals four to six fruits each, the latter being a fortnight to three weeks later. Where a succession of fruit has to be maintained from an early to a late period—say May to November inclusive—the plan is an excellent one. A rather dry condition of the atmosphere, with a little ventilation so as to ensure a circulation of air, is advisable, with a bottom heat of 80° to 85°, and impregnating the blossoms after they become fully expanded is advantageous to a good set. Do not earth up the roots until the fruit is set and swelling. Fire heat will be necessary to maintain a temperature of 70° to 75° by day artificially, rising to 80° or 85° from sun heat, losing no opportunity of closing early, so as to run up to 90° or 95°. Be sparing of the syringe, only use it for damping in the morning and afternoon, syringing the foliage on bright days, and in the early part of the afternoon. Water at the roots only when necessary, using liquid manure to assist in swelling off the crop, giving a thorough soaking when needed. Sprinkling with liquid manure all available surfaces in the afternoon is highly beneficial to the foliage, but it must not be overdone, and it is a good plan to sprinkle the surface of the border with a few fresh horse droppings about twice a week, and a little soot, just a dusting, is sufficient. A handful of superphosphate sprinkled on the surface of the border to each plant after the plants are earthed assists the swelling, fruits of plants to which it is applied being heavier than those the plants of which are stimulated by nitrogenous manures, and there is no comparison of the two in respect of quality. Manure is best not mixed with the soil unless it be devoid of humus, when a fourth of fresh horse droppings mixed with it will insure activity at the roots, and some lime rubbish and charcoal refuse secure a supply of sweet health-sustaining aliment.

Plants with the fruit swelling require careful attention in guarding against canker and preventing the fruits cracking. Fresh slaked lime applied on the first appearance of canker will subdue it, repeating as necessary; but it is aggravated by a close atmosphere, moisture on the stem, and too rich moist soil. A lessened supply of water both at the roots and in the atmosphere, particularly the latter, is the proper remedy for cracked fruits, or cutting the shoot half way through a few joints below the fruit in the case of vigorous plants. Fruit ripening should have a little air constantly, with a temperature of 70° to 75°, and as much more as can be had from sun heat under 100°, with a corresponding increase of ventilation. Cut the fruits as soon as there is the least indication of the footstalk parting from it, even earlier than that if the fruits are expected to keep, and place them in a light and moderately airy fruit room. They will have more flavour and be more mellow than fruits allowed to bake in the sun. The foliage of plants in pits and frames must not be sprinkled, but be kept as dry as possible, watering only to prevent the foliage flagging. Renew or renovate the linings to finish off the crop directly the heat is found to be on the wane, and employ a covering on cold nights. In dull damp weather, and especially at night, leave a little ventilation; a little tilting of the lights at the back will allow the pent-up moisture to escape, and it will keep off cracking to a great extent, as well as aid the fruit in acquiring quality. Keep the foliage thin and the fruit well exposed to the light, but a slight shade from bright sun following a period of dull weather is an advantage.

CUCUMBERS.—Keep young plants well up to the glass to insure a sturdy growth, and secure the growth to a small stake. Pinch out the growing point at the second leaf if the plants are to be trained with more than one stem, and it is important whether the plants are to have one or more stems that all the laterals up to the trellis be rubbed off as soon as discernible, leaving the leaves, when they may be allowed, make side shoots for bearing. Continue the preparation of fermenting materials where such is employed for bottom heat. Manure will require to be turned over every three or four days, while tan will only require to be turned once, and that as soon as it is fairly warmed through. In forming the beds whatever material is used tread it well down. Use the syringe sparingly, giving a light sprinkling only in the early part of the afternoon on bright days, but moderate moisture must be secured by sprinkling in the morning every available surface, and damping before nightfall. The temperature should be maintained at 70° to 75° by artificial means, falling 5° through the night, and allowing an advance to 80°, 85°, or 90° from sun heat, closing at 80°.

In pits and frames the temperature must be maintained by renovating the linings as necessary, and employ night coverings to prevent too great diminution of temperature during the night. Water very carefully, and sprinkle the foliage only on bright days and early in the afternoon. Keep the foliage thin, removing bad leaves and exhausted growths, and husband the sun heat as much as possible by early closing. Ventilate early, just a little to allow of a change of air, and keep up a good heat by allowing a moderate amount of air when the sun affords opportunity.

KITCHEN GARDEN.

THE WEATHER AND THE CROPS.—At the time of writing the weather has improved considerably, but August was a bad month throughout, and vegetable crops are in a worse condition to withstand a severe winter than we ever knew them in September. The growths are soft and watery, and are quite destitute of a robust character, and bright dry weather for a month or six weeks is urgently needed to fortify the winter crops. Nothing should be allowed to interfere with this, and all weeds, superfluous leaves, and such like, should be removed from amongst the winter crops, that the sun and air may play fully upon them. Some may think because they have massive leaves now that they are all right, but when Broccoli and other greens appear as if their foliage had been boiled after a few degrees of frost has occurred, it proves that they were not prepared to meet this as they should, and when once the main leaves are withered the produce will always be of an inferior description.

RUNNER BEANS.—These were unusually late in commencing to fruit this season, none being gathered until August, but they have made up for it since, having been immensely prolific. Readers generally should have taken advantage of this to salt a quantity of pods. Our cook has stored many bushels, and when they come to be used at midwinter it will be difficult for anyone to tell that they are not newly gathered from the plants. As all know, the Kidney Bean is most easily injured by frost. So long as frost does not occur they will continue to bear until very late in the season, and to insure their doing this never allow a pod to remain on the row that is too old for use. It is then the seed begins to form, and this causes all the later and very young pods to cease swelling.

POTATOES.—As we have previously indicated, the greatest failure of the year is in the Potato crop. The best of weather will not remedy the evil now, but good weather will be an advantage in storing the tubers in dry condition, and if the soil and atmosphere are favourable the storing should be pushed on as rapidly as possible. Nothing is to be gained by waiting, but wet weather later on would make the storing in proper condition most difficult. Fortunately we find those stored several weeks ago keeping much better than was anticipated, but we attribute this to extra care in storing, hence our reason for again referring to it.

TOMATOES.—The indoor crops have been as good as ever, but the open-air ones greatly deficient. A full supply can only be secured from the plants under glass this season, and the plants should therefore receive extra attention. Those that have been fruiting all up the stem may appear withered and unsightly on that part now, but if the points are green and bearing fruit, the old foliage may be cut off the stem and the fresh points encouraged to grow. If the pots, boxes, or beds in which they are growing are very full of roots and exhausted soil, give them a surface dressing of turf and manure in about equal parts. Water freely afterwards with liquid manure. Cut all the fruit off as soon as it begins to change colour, that the latest may have the full benefit of the energies of the plant. It will be found that on fine sunny days they will make more progress with abundance of ventilation than by keeping them close in a high temperature. Plenty of dry air is highly advantageous to them, not only in causing the fruit to swell, but also in making it firm. By keeping our open-air plants strictly confined to one stem they are now producing ripe fruit, but some we noticed elsewhere that were a mass of foliage and shoots, had not swelled their fruit to half its size, and it did not give any indication of maturing. If this growth is allowed to remain on, the fruit will not ripen this season, but by fully exposing it much may still ripen before the end of October. Plants with a superabundance of growth are better kept rather dry.

BIRDS AND LATE PEAS.—Row after row of Peas may be grown at midseason without the birds doing them any great harm, but the late rows which are most available are often much injured by them. In many cases they will clear out the pods so completely that they are hardly worth gathering, and this is sometimes done before one is aware that they have been feeding on them. It is the sparrows that are most destructive on late Peas, and the protection of all late rows should be seen to from the time the pods are first formed, as they often attack the young pods whether there are peas in them or not. The only mode of protecting them is to cover the rows with nets, and this should be done at once, and continued until the Peas are finished.

AUTUMN-SOWN CABBAGE.—The young plants placed out two or three weeks ago are now growing freely, and another plantation should be formed. The advantage of planting at two or three times and at intervals of a few weeks is that with a mild or severe winter some of the plants may suffer, or be pushed on too much and induced to flower prematurely; but one or more of the plots are sure to be successful, probably all. By planting at two or three different times the most forward can also be planted, which gives the later ones a better chance to become robust. All must be planted in good rich soil. They will never swell and heart freely in spring in poor material. Those who wish to market some of their produce should plant these Cabbage largely so as to have them ready very early in spring, as they are a most remunerative crop at that time.

RHUBARB FOR FORCING.—Roots intended for early forcing should have the foliage removed from the crowns as soon as any of the leaves die, as when the crowns are well ripened they force much easier than when soft and green, which they will be if the foliage is allowed to remain on them as it falls to the ground.

SWEET BASIL.—This distinctly flavoured herb is often called for. Most cooks prefer it green, and a cutting box or several 6-inch pots

should be sown with the seed at the present time. If placed in a gentle heat and kept in the light the plants will be ready for gathering from in November, and give a supply all winter.

THE BEE-KEEPER.

APIARIAN NOTES.

THE UNEXPECTED.

ALTHOUGH I had almost abandoned all hopes of obtaining a single drop of honey, at the last hour, the 3rd of September, brought hopes that there might be an exception, and we were not disappointed. On September 5th a favourable change took place, which continued, and such splendid weather we have not experienced for years before, the bees working with a vigour seldom witnessed, some of the strong hives rising nearly 50 lbs. A slight change to the worse came upon the 10th, which lasted three days, the lower temperature driving the crowding out bees inside, and reducing the honey gathering to little more than what would afford a living. On the 12th there were indications of a favourable change, and should it keep fair with a higher temperature for three or four days, instead of having to record 1890 as a total failure in a honey yield, it may be one of the highest. We are not yet out of the wood, but an average yield is certain, and we cannot say it is "the worst season in the remembrance of man."

The Carniolians and Syrians are the heaviest colonies at the present. We are only two hours by rail from England, and if those south of the Tweed desire to do good to the cottager bee-keeper they should come north, and I will do my utmost to initiate them in the art of bee-keeping, which our once light but now heavy hives will illustrate.

The result of the present year confirms what I have taught. As I am still with my bees I must close with the promise of full particulars, and advise to all bee-keepers to have their bees fed and finished up in their winter coats this month, so that both bee-master and bees may have a winter of repose after so tantalising and fatiguing a summer.—A LANARKSHIRE BEE-KEEPER.

BEES AND THEIR WAYS.

BEES are to be regarded from two points of view—as the exponents of various social and moral qualities, and as honey making machines. For the moment let us consider them from the former point of view. The opinion expressed by Aristotle, that the humming sound made by a bee is caused by the "illusion of an inward spirit," has always seemed to us sound common sense. If a bee is not possessed by a spirit, and an aggravating kind of spirit too, how can her manners and customs be accounted for? There is nothing else in nature so contrary, so persistently fussy and disagreeable as a bee—unless it be a wasp. The bee is an impostor of the rankest kind, for it has set itself up as an example to youth on just those particular points that are most disagreeable to the young, and it has not really fulfilled its own ideal. People praise bees for their wisdom, but they will enter the same flower six times over, and never find out they have been there before. They are credited with prudence, but they will gorge themselves on any poisonous blossom placed within their reach. Universal suffrage, free education, and a free breakfast table we admit they have, and a number of other things that people will talk about and think they want. What we complain of is the immorality of pointing out to young people of both sexes that the persistent and unremitting fussiness of the bee is worthy of admiration. That bees strain all their energies after acquiring honey all day is no reason why we should do so, or why we should admire them because they don't smoke tobacco or go to the theatre. They don't want to do these things; they would do them if they wanted to. As to their cleverness, they are clever enough to go out for a fly and find their way back to their hive if it is not moved 6 inches on one side. Shift the hive a little and every bee will fly back to where it started from and stay there. If the hive is moved 3 feet they will not be able to find it, but lie there and die in the cold rather than look for it. Then as to economy. A bee has no sense of proportion; it will go on storing up honey far beyond what it can eat, and fags itself out every day for something it does not want. A bee has no pleasures, for it is always in a temper about something. The way it swears when it gets into a flower and can't find the way out again is demoralising in the extreme. The only real luxury bees seem to indulge in is fighting. If a strange bee comes to make a call the inhabitants of that hive sting her to death. As the call is usually made for the purpose of robbery there may be some sense in inflicting the death penalty, but what of the morality of a nation that keeps organised bands of robbers and employs lynch law!

Bees are well known to be of the female sex, but not entirely so. The unrestricted female would be too much even for bees. The only

perfect female is the queen. Mature consideration has led us to the conclusion that most of the imperfections of bee-life arise from its too exclusively feminine elements. Drones are at a discount, and are not allowed to vote or to be in the government; consequently the women have it all their own way, and we see what comes of it. A hive is nothing more nor less than a gigantic nursery and store cupboard. The whole energies of the community are concentrated on feeding-bottles and pap. They have no picture galleries, no concerts, no clubs, no art critics, no amusements; everything is brought down to a dead level of industry. Hexagons are employed for keeping honey in because those women put their heads together and found that hexagons took up less room than any other form, and rent costs money. Trust a woman for small economies! A man would have varied the shape a little occasionally—thrown in a cornice, or built out a buttress, or run up a spire, or something to get a little variety. Not so the woman; give her utilitarianism. Then as to visitors. A woman doesn't want visitors when she has a baby to attend to, and she does not want her husband to have them either. Bees don't care about news from the outer world; they can make their own gossip for themselves. There is a popular superstition that bees surround their queen when she moves about in order to show due reverence to majesty. Not a bit of it. They are only keeping their eye on her. Fancy the position of that one defenceless perfect woman among so many of her sex who are not so perfect as she is. To show what a life one poor defenceless female has among so many, bee-keepers tell us that the queen is expected to lay from two to three thousand eggs a day for several weeks, and if she does not give the nurses enough to do she is turned out into a cold world to tend for herself.—(*St. James's Gazette*.)

[What has "A Lanarkshire Bee-keeper" to say to the above amusing summary of his little friends?]

TO CORRESPONDENTS

All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Trees "Barked" by Cattle (*Anxious*).—If the bark has been removed all round the trees and quite down to the wood the injury cannot be otherwise than detrimental. We have known such accidents to end fatally, but large trees are slow in dying. Usually the removal of bark is not so complete as is suggested, and often feared. Paring smooth the torn edges of the bark, and bandaging a thick plaster of clay worked into a smooth pigment, and fresh cow manure in equal parts, round the stems may be of considerable value to your trees.

Eucharis not Thriving (*W. H. L.*).—There is nothing whatever amiss with the leaf, and although you say the plants have plenty of roots they may be attacked by mites and will soon disappear. We should give the plants bottom heat if possible, 85° to 90° at the bottom of the pots not being too much, and when the plants have made good roots and are growing freely afford liquid manure copiously, maintaining a moist, genial condition of the atmosphere, and they will probably outgrow their complaint.

Spawn from Old Mushroom Bed (*A Beginner*).—The mouldy portions permeated by very fine threads of mycelium may sometimes be used for spawning new beds, but the spawn of old beds is generally too exhausted and often so filled with the mycelium of other fungi as not to be reliable or desirable. Good new spawn only should be used, securing the best possible as the cheapest in the end. The filament you have sent is totally unsuited for any purpose; indeed it is the mycelium of a very undesirable *Agaricus*, probably *A. muscarius*, due probably to the presence of wood forming the bottom of the bed, and ought to be cleared away, dusting with quicklime.

Double Whin, Gorse, or Furze Cuttings (*J. B.*).—August or early September is perhaps the best time to insert cuttings of this very beautiful plant in sandy soil, surfaced with about an inch of sand on a shady border, or preferably under a handlight. We have also seen

them inserted in autumn and spring, and successfully, but the most success attended the insertion of the cuttings at the time indicated. The cuttings are best with a heel, but strong cuttings cut transversely below a joint will also strike. The current year's growth should be chosen, or, if in spring, the previous year's growth, removing all the side leaves, inserting about two-thirds their length in the soil, making it firm, giving a good watering to settle the soil about them. If under a handlight allow the water to soak well in before placing the light over them. They must be shaded from sun, a north border being the most suitable place, and they will be ready to be transplanted the autumn following.

Keeping Black Hamburgh Grapes (W. W.).—The Grapes will keep much best on the Vines until the foliage falls or begins to fall, when they should be cut, bottled, and kept in a room with as equable a temperature as possible, between 40° and 45°, ventilating freely above the latter temperature. Damp should be carefully guarded against. Rain water should be used with a few pieces of charcoal in each bottle to keep the water sweet. The Grapes being ripe the chief thing is to guard against damp. That is best done by free ventilation in the day-time, and a gentle warmth in the pipes, the heat being turned on in the morning or the fire lighted, and it should be turned off about noon so as to allow the pipes to become cool before night. No fire heat will be required at night, or only to prevent the temperature falling below 40°. On fine nights a little ventilation may be left on, but in damp foggy weather the house should be closed, with a slight warmth in the pipes. In fine weather ventilate early so as to prevent the deposition of moisture on the Grapes. The Grapes should be examined frequently, removing decayed berries as they appear.

Cottager's Red Potato (Handy Andy).—The Potato of which you send sample tubers is the Cottager's Red Potato, and is thus described in Vilmorin's "Vegetable Garden":—"Tubers flattened, oblong, usually very regular in shape, from about 3½ to 4 inches long, and about 2 inches in diameter; skin smooth, of a rather vivid red colour; eyes faintly marked, not sunk; flesh yellow; shoot pink. Stems tall, erect, very vigorous growing, almost always branching, often 3 feet or more in height, quadrangular, slightly winged, and very deeply tinged with brownish red. Leaves large, composed of very unequally sized, quite oval-rounded, very much reticulated leaflets of a dark, slightly greyish and dull green. Flowers of a pale violet colour, in very numerous clusters usually intermingled with the leaves, very rarely producing seed. One of the best kinds for winter use, and most extensively in request in Paris late in autumn. The flesh is somewhat compact, but becomes more floury as the season advances. This variety is rather free from the Potato disease properly so called, but it often suffers from the affection known in France as 'la Frisolée,' which shrivels up both leaves and stems at the commencement of their growth. This is its only defect."

Culture of Stephanotis floribunda (J. G.).—It is a great mistake to keep this plant too warm, for its growths are more sturdy and it flowers more profusely when grown under cooler and more airy conditions than the plant is generally subjected to. Cool, airy treatment after flowering is of the utmost importance to thoroughly harden and ripen the wood before the season for complete rest arrives. The plants that flowered early in the year have had no artificial heat for the last six weeks, and none will be given as long as the temperature can be kept from falling below 50° at night. Abundance of air should be admitted during the day, and a little ventilation allowed all night when the weather is mild. The atmospheric conditions of the house should also be much drier than is generally the case. If this plant is infested with mealy bug it should be thoroughly syringed once a week with petroleum and water, one ounce of the former being added to a gallon of the latter. If the oil is well mixed in the manner frequently described, and the plant shaded from strong sun for about two days after syringing, the bug may be thoroughly eradicated. Half measures are next to useless, and syringing with petroleum two or three times a year only reduces the bug and does not prove effectual in clearing the plants entirely of the pest.

Grapes Falling (J. S.).—The berries you send are large, but the skins very defective, while the footstalks are by no means satisfactory. You probably top-dress the border with manure and give adequate supplies of water, also, possibly, liquid manure. This treatment would cause the fruit to swell to a good size, but would not, of necessity, impart substance to the skins and footstalks, as the liquid might not contain the necessary ingredients. Generally speaking, the skins of Grapes, when in good condition, contain about 47 per cent. of potash, 22 of lime, 16 of phosphoric acid, besides small quantities of magnesia, sulphuric acid, iron, silica, &c. Your Vines have not had what they need of those essentials, especially the first three named; and are the less likely to obtain them with the roots 18 inches below the surface, and some of them probably much deeper. Your Vines need lifting and the roots placing in fresh and better soil nearer the surface and there kept moist. If this cannot be done, the removal of the old soil down to the roots, liberating some of them, and pruning and placing them in a suitable medium, would cause a multiplication of fibres. Good loam, with a large addition of wood ashes and finely crushed bones, or some of Thomson's Vine manure, would form a suitable compost; but we suspect that manure applied to the surface of the present border would do little good. We should clear off the fruit as soon as possible, and at once commence action at the roots, shading and syringing the Vines if

requisite for maintaining the freshness of the foliage, as this will at once encourage the production of fresh roots. We should renovate the outside border this autumn and the inside border another year. The Vines have done as much as they could be expected to do since they were planted, and deserve to be encouraged in the manner suggested.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (T. T.).—1, Lord Grosvenor; 2, Stirling Castle; 3, Golden Winter Pearmain; 4, Winter Greening. (E. R. P.).—1, Rymer; 2, Tower of Glamis; 3, Manks Codlin; 5, Doyenné du Comice; 6, not known. The Pears are not in condition to be named.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens should be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (W. R. O.).—1, *Potentilla fruticosa*; 2, *Helenium autumnale*; 3, *Bocconia cordata*. (Capt. Lambert).—1, *Polygonum cuspidatum*. (M. T.).—1, *Polypodium vulgare*; 2, *Trichomanes radicans*; 3, *Hymenophyllum tunbridgense*; 4, *Asplenium Adiantum-nigrum*.

COVENT GARDEN MARKET.—SEPTEMBER 17TH.

MARKET quiet, with no alteration.

FRUIT.					
	s.	d.	s.	d.	s.
Apples, ½ sieve	3	6	to	6	0
" Nova Scotia and					
Canada, per barrel	0	0		0	0
" Tasmanian, p. case	0	0		0	0
Grapes, per lb.	0	9		3	0
Kentish Filberts, 100 lbs.	50	0		52	6
" Cobs	55	0		57	
Lemons, case	10	0	to	15	0
Melons, each	1	0		2	0
Oranges, per 100	4	0		9	0
Peaches, dozen	1	0		8	0
Plums, ½ sieve	4	0		9	0
St. Michael Pines, each..	2	0		6	0
Strawberries, per lb. ..	0	0		0	0

VEGETABLES.

	s.	d.	s.	d.	s.	d.	s.	d.
Artichokes, dozen	0	0	to	0	0			
Asparagus, bundle	0	0		0	0			
Beans, Kidney, per lb. ..	0	3		0	0			
Beet, Red, dozen	1	0		0	0			
Brussels Sprouts, ½ sieve	0	0		0	0			
Cabbage, dozen	1	6		0	0			
Carrots, bunch	0	4		0	0			
Cauliflowers, dozen	2	0		4	0			
Celery, bundle	1	0		1	3			
Coleworts, doz. bunches	2	0		4	0			
Cucumbers, doz.	2	0		3	6			
Endive, dozen	1	0		0	0			
Herbs, bunch	0	2		0	0			
Leeks, bunch	0	2		0	0			
Lettuce, dozen	0	9		1	3			
Mushrooms, punnet	1	6	to	2	0			
Mustard & Cress, punnet	0	2		0	0			
Onions, bushel	3	0		4	0			
Parsley, dozen bunches	2	0		3	0			
Parsnips, dozen	1	0		0	0			
Potatoes, per cwt.	3	0		4	0			
New, per lb.	0	0		0	0			
Rhubarb, bundle	0	2		0	0			
Salsafy, bundle	1	0		1	6			
Scorzonera, bundle	1	6		0	0			
Seakale, per bkt.	0	0		0	0			
Shallots, per lb.	0	3		0	0			
Spinach, bushel	1	0		2	0			
Tomatoes, per lb.	0	3		0	6			
Turnips, bunch	0	4		0	0			

CUT FLOWERS.

	s.	d.	s.	d.	s.	d.	s.	d.
Arum Lilies, 12 blooms ..	2	0	to	4	0			
Asters, per bunch, French	0	9		1	0			
" English, 12 bunchs.	3	0		6	0			
Bouvardias, bunch	0	6		1	0			
Carnations, 12 bunches ..	4	0		6	0			
" 12 blooms	1	0		2	0			
Calceolaria, doz. bunches	3	0		6	0			
Chrysanthemum, 12 blms.	1	0		3	0			
" 12 bunches	4	0		12	0			
Cornflower, doz. bunches	1	6		3	0			
Dahlias, dozen bunches ..	2	0		4	0			
Eschscholtzia, 12 bunches	0	0		0	0			
Eucharis, dozen	2	0		4	0			
Forget-me-not, doz. bch.	1	6		4	0			
Gardenias, 12 blooms ..	2	0		4	0			
Glaudiolus, 12 bunches ..	4	0		9	0			
Gypsophila, per bunch ..	0	6		1	0			
Iris, various, dozen bunchs.	0	0		0	0			
Lapageria, 12 blooms ..	2	0		4	0			
Lavender, dozen bunches	3	0		5	0			
Lilium, various, 12 blms.	1	0	to	2	0			
" longiflorum, 12 blms.	2	0		4	0			
Marguerites, 12 bunches	2	0		6	0			
Maidenhair Fern, dozen								
bunches	4	0		9	0			
Mignonette, 12 bunches ..	1	0		3	0			
Pansies, dozen bunches ..	1	0		2	0			
Pelargoniums, 12 trnses	0	9		1	0			
" scarlet, 12 bunchs	3	0		6	0			
Pinks (various), doz. behs.	3	0		6	0			
Primula (double) 12 sprays	0	6		1	0			
Roses (indoor), dozen ..	0	6		1	6			
" Moss (Eng.), 12 bch.	0	0		0	0			
" Red (Eng.), 12 bch.	2	0		6	0			
" Red, 12 blooms ..	1	0		2	0			
" Tea, white, dozen ..	0	6		2	0			
" Yellow	2	0		4	0			
Stocks, dozen bunches ..	3	0		6	0			
Sweet Peas, 12 bunches	1	6		3	0			
Tuberose, 12 blooms ..	0	3		0	0			

PLANTS IN POTS.

	s.	d.	s.	d.	s.	d.	s.	d.
Aralia Sieboldi, dozen ..	6	0	to	12	0			
Arbor Vita (golden) doz.	6	0		8	0			
Asters, dozen pots	3	0		6	0			
Calceolaria, per doz. ..	4	0		6	0			
Chrysanthemum, per doz.	6	0		24	0			
Climbing Plants, various,								
dozen pots	4	0		9	0			
Cyclamen, per dozen ..	0	0		0	0			
Deutzia, 12 pots	0	0		0	0			
Dracena terminalis, doz.	24	0		42	0			
" viridis, dozen	12	0		24	0			
Epiphyllum, per dozen ..	0	0		0	0			
Erica, Cavendishi, per pt.	0	0		0	0			
" various, dozen	12	0		18	0			
Eucynymus, var., dozen ..	6	0		18	0			
Evergreens, in var., dozen	6	0		24	0			
Ferns, in variety, dozen ..	4	0		18	0			
Ficus elastica, each ..	1	6		7	0			
Foliage plants, var., each	2	0		10	0			
Fuchsia, per doz.	4	0		9	0			
Geraniums, Ivy, per doz.	3	0		6	0			
Geraniums Scarlet, p. doz.	2	0	to	6	0			
Heliotrope, per doz. ..	4	0		6	0			
Hydrangea, doz. pots ..	9	0		18	0			
Lilium lancifolium, doz.	9	0		18	0			
" longiflorum, doz. 12	0	0		24	0			
Lily of the Valley, 12 pots	0	0		0	0			
Lobelia, per doz.	0	0		0	0			
Marguerite Daisy, dozen	6	0		12	0			
Mignonette, per dozen ..	4	0		6	0			
Musk, per dozen	0	0		0	0			
Myrtles, dozen	6	0		12	0			
Nasturtiums, dozen pots	0	0		0	0			
Palms, in var., each ..	2	6		21	0			
Pelargoniums, per doz. ..	6	0		12	0			
Rhodantha, per dozen ..	4	0		6	0			
Saxifraga pyramidalis,								
per dozen	0	0		0	0			
Spiraea, 12 pots	0	0		0	0			
Stocks, per doz.	0	0		0	0			
Tropaeolums, various, per								
dozen	0	0		0	0			



AFTER HARVEST.

YES, we are at length able to speak of harvest in the past tense once more, as indeed are most farmers south of the Trent. Some laggards there are and always will be both in sowing and reaping, but the majority gladly hastened to turn to full account the spell of fine weather which set in just when the long waiting for it had proved so disheartening. No doubt those who got much soft Wheat together in August feel some regret that they did not wait awhile, but as they took good care to make small ricks the corn will certainly soon dry and harden ; and then, too, there is the comforting reflection that it was saved without sprouting.

We have recently listened to the exchange of congratulations upon the improvement in the price of Wheat. We heard them with regret, because of the certainty of a downward tendency again which was inevitable. The fall in price has already begun, and is likely to continue, for much Wheat that was in shock at the end of August was left out fully exposed to sun and wind well into the second week of September, and then carted directly to the threshing machine. All this will be speedily on sale, for even 35s. per quarter is too tempting a price to pass in these times, the 5s. over 30s. being sufficient to pay the rent of most of the Wheat land at any rate.

Barley is a better trade, good malting samples ranging as high as 45s. for the highest quality. This certainly points to an entirely satisfactory result, for the crop on many farms was excellent. Some of the best ears we have seen were quite green on the 9th inst. This was an exceptionally late field in Leicestershire, which was evidently sown very late. To save it in good condition will just be a stroke of luck, and it is always better to sow Oats when such late cropping becomes a necessity, as they are a safe late crop. The Barley season can hardly be said to have begun yet, for buyers are always shy of early samples, and do not buy with confidence till the sweating in stacks is over. So far as prices go they average nearly 7s. per quarter higher than a year ago.

Prospects of good Clover seed are so bad that old seed is in strong demand, and prices are advancing. The second crop of Clover is fast being mown where it is intended for hay, and more of it than usual will probably be converted into hay or silage owing to the abundance of feed. Trefoil seed is also almost a failure, and seed another season is quite certain to be dear. A dripping summer is unfavourable to seed development, but we have some compensation in the free growth of all forage crops.

A recent journey through Worcestershire enabled us to see a moderate crop of fine bright Hops being picked in excellent condition. Most pleasant is the sight, sound, and scent of the Hop picking, and the local pickers in the west must escape much of the competition to which those in the home counties are subject from the thousands of Londoners who throng to the Hop gardens now for work, and bring down the price of picking. It is always a matter for regret when foreign competition or trade experiences prove hurtful to such home industries, even though, like Hop picking, they are but things of a brief season, and low prices have caused a serious curtailment of the Hop area.

It is unfortunate that a poor fruit crop occurs just when efforts are being made to extend fruit farming. The general failure is among Apples and Pears, but remarkable exceptions are to be met with, and we came upon a Worcestershire orchard with a full crop upon most of the Apple trees, and we were shown a huge standard Apple tree in a cottage garden bearing a marvellous crop of fruit which was valued at £4. Both the orchard and garden were well sheltered, and farmers who intend planting will do well to re-

member that shelter often makes the difference between a full crop and none at all. Another important point is to plant standards and to fill up the space between the trees with bush fruit. We much desire also to see more fruit trees in pasture, for if only the trees are planted 40 or 50 feet apart, both the pasture and fruit trees answer perfectly, and while the trees are growing the pasture will pay the rent and something more. Very few and simple are the points of importance in this work—healthy trees, good sorts, careful planting, thorough support till the roots are so well established in the soil that they cannot be loosened by wind, and the protection of the stems sufficiently to prevent bark nibbling by sheep or hares and rabbits. Readers of the Journal are so familiar with all such matters that we need not enlarge upon them, but we may call attention to the importance of so supporting the trees that the bark sustains no harm. In the Worcestershire orchards the young trees are placed in a sort of cradle consisting of two stout posts driven into the ground on opposite sides of the tree, with parallel strips of wood nailed to the post near the top, between which the tree sways about with the wind, and the bark is battered about so much that growth must suffer.

WORK ON THE HOME FARM.

Every effort is being made to turn the fine autumn to full account ; and with harvest work ended, broadshares, harrows, and ploughs are kept going briskly to get the land clean. The corn stacks are a goodly show, and we shall keep the threshing in abeyance till autumn tillages are ended and winter corn is sown. A little threshing must be done for seed corn ; but that is a trifle—easily managed by threshing some of the corn in barn for that purpose.

With the corn so long about, between the reaping and stacking there has been much waste. We have done our best to utilise fallen grain by driving turkeys upon fresh stubbles daily, and moving all our portable poultry houses frequently to clear up the corn before the surface is broken up. Sheep and swine consume fallen ears greedily enough, but poultry are required to make clean work of the grain. As old hens cease laying they are got rid of, as it never answers to keep them over for another season ; and our early pullets give fair promise of soon beginning to lay. A supply of turkey poults should now be ready at the home farm, and there should be a sufficient stock of young birds to afford one or two weekly till spring. Geese are not so much in request, and a comparatively small number is sufficient.

It is well to take stock of the poultry occasionally, and to see that a full supply of each kind is bred for all possible requirements. Chickens, ducks, turkeys, geese, guinea fowls, and pigeons are all in regular seasonable demand. It is well to try always to have plenty of young pigeons when game is scarce. The dovecots of old manor houses show how highly our forefathers relished such fare, and though we have a much more varied and more wholesome dietary than was possible for them, pigeon pie is still in high favour.

Among chickens we have reason to give Minorcas a high place as table birds. We were induced to purchase some last spring by the excellent accounts we heard of the abundant supply of fine large eggs which this breed affords, and we have found them alike good for eggs and for table. It is true that they are not so large as some breeds, but they have small legs and nice plump breasts, are not at all coarse, and precisely the sort of chicken liked by a connoisseur. We call special attention to this matter, as the table poultry of home farms is so frequently unsatisfactory, and we know the value of a little special information in overcoming a difficulty.

METEOROLOGICAL OBSERVATIONS.

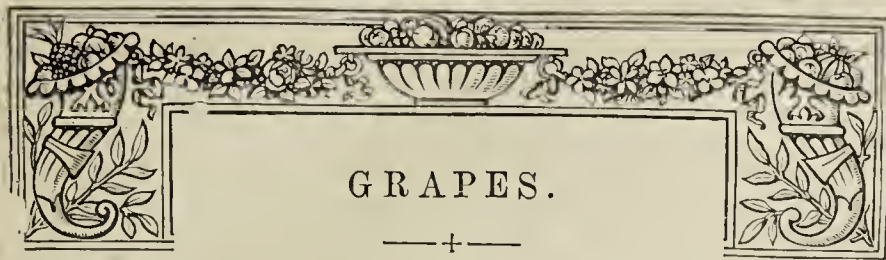
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N. ; Long. 0° 8' 0" W. ; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				Rain	
	Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min.	In sun.	On grass		
1890.											
September.											
Sunday	7	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.	
Monday	8	30.481	58.9	55.9	N.E.	60.6	72.2	52.5	107.3	49.5	
Tuesday	9	30.469	55.9	54.2	N.E.	60.0	72.6	48.0	102.1	44.7	
Wednesday ..	10	30.379	54.8	54.6	N.W.	59.2	72.1	47.8	94.9	44.8	
Thursday ..	11	30.217	60.9	58.0	S.E.	59.0	75.9	51.1	111.1	43.9	
Friday	12	30.195	61.1	54.6	N.W.	59.7	72.8	48.9	119.9	44.6	
Saturday	13	30.291	58.8	54.7	N.	60.0	69.2	48.7	87.7	44.8	
		30.261	52.4	51.6	N.E.	58.8	65.0	46.9	77.5	43.6	
		30.328	57.5	54.7		59.6	71.4	49.1	100.1	45.6	

REMARKS.

7th.—Bright and warm ; rather hazy early.
8th.—Misty early and hazy morning ; bright warm afternoon.
9th.—Misty early, and dull till about eleven, then bright and warm.
10th.—Bright and warm throughout.
11th.—Warm and brilliant.
12th.—Bright throughout.
13th.—Slightly foggy all morning ; bright afternoon.
Another rainless week, with very pleasant temperature.—G. J. SYMONS.



MR. J. ROBERTS, in his excellent and suggestive paper on "Grape Culture for Market," published on page 241 last week, observed:—"Those who are old enough to carry their memories back thirty, or even twenty, years will be able to recognise how greatly this fruit has risen in commercial value." The increase in the production of this princely fruit during the period indicated has been little short of marvellous. Not only has the market supply increased enormously in bulk, but the advance in value, as represented by the size and good appearance of the fruit, is equally remarkable. Twenty or thirty years ago the general character of market Grapes was the reverse of inviting, and much of the fruit by its rubbed and bedraggled appearance was more calculated to repel than to invite purchasers. No doubt superior Grapes could be had, but they were exceptional, and the prices were high accordingly. Grapes, large and practically faultless in colour and quality, were regarded as luxuries a generation ago; whereas they now abound and are obtained by thousands of persons to whom the prices of the old days would be prohibitive. It is to the improvement in culture and packing, as well as to the increase in quantity, that the present popularity of Grapes may be ascribed, and the best cultivators are yet able to derive profit by their skill, or they would not continue in the occupation. The prices for their fruit have undoubtedly fallen considerably, but many, if not all, the chief growers have in some way contrived to increase the bulk of their produce without impairing its quality, and so they have managed to "struggle on," while some who might be heard declaring that Grape growing was "done for" have extended the cultivation of this most popular of all exotic fruits.

Mr. Barron, in his useful and highly popular work, "Vines and Vine Culture," refers to the commercial supply of Grapes and the general fall in prices as follows:—"The average prices now realised are from 25 to 50 per cent. lower than they were ten years ago. Many feared that the enormous increase of the Grape trade would swamp the market and ruin the growers. On the contrary, however, more money in the aggregate is realised by the growers than was formerly the case with high prices. They base their calculations on the actual costs and gross returns, and argue thus: that to sell a ton of Grapes at 2s. or 3s. per lb. is better than, as formerly, to sell a few hundred pounds at 10s. or 20s. per lb.—prices that were practically beyond the reach of the consumers. Cheap prices now enable retail fruiterers to maintain a supply on sale at all times, thus increasing the consumption." How great this was when those lines were written in 1887 the author of the above work gives some examples. One commission agent in Covent Garden is said to have disposed of over 40,000 baskets, or an equivalent of about 250 tons, in the preceding year; and a Kensington fruiterer is recorded as having sold to his customers during the same period 40,144 lbs, the cost price of which averaged a little over 1s. a pound. It is clear that the public are very well served with Grapes, but with the increase of population and wealth the demand will increase also, and perhaps in greater proportion than before, since the dietetic and hygienic value of fruit is becoming more and more appreciated.

Mr. Barron has done good service in disseminating sound knowledge on Grape culture during the past few years; but there is another gentleman to whom the world is immensely indebted—

the veteran cultivator and effective teacher, Mr. William Thomson of Clovenfords. Mr. Thomson has been growing Grapes, such as have seldom, if ever, been surpassed, between fifty and sixty years, and twenty-eight years have elapsed since the first edition appeared of his "Practical Treatise on the Grape Vine" (Blackwood). Practical it undoubtedly is, as it is a record plainly and clearly told of his actual practice and its excellent results. It is impossible to estimate the amount of good that has been done in the Grape growing world by the publication of this work. Gardeners all over the kingdom have been made wiser by its teaching, and Grape growing was never so well understood before as it became after its appearance. Ten editions of the work have been issued, and the last of them has been for some time on our table. What may be termed the "Grape Conference week" at Chiswick appears appropriate for a brief allusion to the re-issue, and also for recognising the great services of the author by the publication of his portrait, which will be found on page 273.

We have no intention of writing the history of the great cultivator. We know he took charge of the gardens at Wrotham Park, Barnet, in 1837, and in the work he has graphically described the bold treatment to which he subjected the Vines there. It is worth repeating.

"In a house 65 feet long and 22 feet wide there was a row of strong cast-iron pillars running along the centre of it to support the rafters, and against these the Vines were planted, twisting round them like enormous snakes. My employers were loth to have these old Vines destroyed, and wished me to make an effort to renovate them if possible. I made a careful examination of the state and position of their roots, and found that none of them were within a foot of the surface of the soil. It was the custom to keep all the bedding plants standing on the floor of this house, and the constant watering and treading had made the whole surface, which had not been broken up for years, as hard as asphalt. This I had picked up, and removed from the house, to the depth of 1 foot. I then got hold of the leading roots and traced them as far as possible. When they could be pursued no farther without going a great depth I cut them and coiled them round the pillars that supported the stems, till in this way I had raised some eight or ten of the roots of each Vine, not one of which, as far as I traced them, had any live rootlets on them. I had mats put round these bundles of roots, and kept them damp for the time being. I then laid out all the roots on a bed of new soil, making a regular set of incisions with the knife right and left, about 9 inches apart, along their whole length, covering them over with 6 inches of the same compost, and giving them a good watering with warm water. This was done in March, just as their buds were beginning to swell. They broke as weak as straws, and looked very miserable till about the end of July, when they showed some signs of making second growths of a more vigorous character than the first. Shortly after this time I dug down to several of the roots I had made the incisions in, and found that from the lip of each wound nearest the parent stem a great number of young roots, like porcupine quills, had started off into the new soil. This was in the summer of 1838, and in 1839 they broke comparatively strong, showing a fair crop of fruit, which they brought to perfect maturity. In 1840, and for seven or eight years afterwards, they bore first-rate crops of excellent Grapes colouring well. They were Black Hamburgs."

That successful example of Vine renovation has been copied in hundreds of instances with excellent results. After bearing for some years the Vines were removed, all but one that was left for experiment, and this Vine we saw thirty years subsequently in the best of condition and bearing splendid fruit.

Having given an extract from the first edition of the work we take another from the tenth, in which are embodied sensible remarks on Vine borders, thus:—

"In making up the border, if the soil is what may be termed light loam, let it be well beaten and made evenly firm by a steel fork; but do not tread it hard with the feet, or wheel barrows over it. If the soil is what may be termed heavy, and especially if damp when the border is made up, the above caution is even more necessary. I know of nothing in the field of horticulture that exhibits greater lack of scientific knowledge than ramming damp soil hard together in positions where it is to remain for years,

unless it be the thumbing of soil in a damp state round the roots of a plant in a pot, forgetting altogether that the action of the air in the soil is most necessary.

"It is of great importance that nothing should be added to the soil of a Vine border which, after the plant-food it contains has been absorbed, leaves a residuum of inert humus, which shuts up the pores of the soil, hinders the healthy action of the atmosphere, and retains an excess of water like a sponge, in time rendering the border what gardeners justly term sour. This, farmyard manure at its best does. There is the additional danger of horse dung breeding fungi.

"If Vine roots are not confined by bricks and mortar to such a border as I have indicated, they escape from it to soil that was not prepared for them, and sometimes thrive better in the latter than in the former.

"Another mistake that, up to the present date, is not uncommon, is that of mixing half-inch bones in Vine borders. They are of little or no value. I have seen them as whole as when mixed with the soil, after being thirty years in it, and not a root near them. Bones are an excellent element in a manure for Vines or any other fruit-bearing plant, but they should be ground as fine as possible. In this state they form a considerable portion of the manure I feel bound to recommend.

"For good reasons it is best not to make up the whole width of the outside border when the Vines are planted, especially if it is to be a wide one; 6 feet in width outside the arches will be ample for two years. This has more than one advantage. It gives time to procure soil, not always an easy matter, and roots enter new soil with greater rapidity than they do soil that has been lying soaked with wet for two years, by which time the chance is it has become sour; rich soil is much more liable to do this when unoccupied by roots than when it is.

"While on the subject of borders I must enter a protest against the extreme folly of planting flowers or growing vegetables on Vine borders. The roots rob the soil of the food intended for the Vines, and, even worse than this, keep off the genial heat of the sun. I called at a fine garden down the Clyde last autumn. The gardener took me into a range of vineries, and remarked that of late years the Vines had yielded very inferior Grapes. I replied that little else could be expected, seeing the enormous crop of plants on the borders up to the vinery front sashes. First a row of single Dahlias 3 feet high; then came *Perilla nankinensis*, Stocks, Geraniums, &c. The gardener said his view was the same as mine with regard to the cause of the injury to the Vines, and he had often pointed it out to Mrs. —; but she said she could not bear to see naked borders, at the same time she expected good Grapes. This is one of the many difficulties gardeners have to contend with."

The citations show the thoroughly useful nature of this treatise. Both it and Mr. Barron's book should be possessed by every gardener and amateur who desires to grow Grapes of the first quality, either for home use or for sale, as only the best crops of the best fruit can be satisfactory or profitable.

Passing to the Chiswick Conference, at which representative exhibits of Grapes and Dahlias were invited, and writing some days before the event, we suspect that Dahlia growers will make the greatest response. Collections of all or most of the different types of Grapes are grown in comparatively few establishments, and we anticipate no such imposing display of fruit as is forthcoming at great competitive shows of the popular varieties. The attention that is devoted to those which are exclusively grown in the majority of gardens, is causing many Grapes of distinct characteristics, and possessing special qualities, to be overlooked, if not forgotten, and it was a happy idea, on the part of the Royal Horticultural Society to afford an opportunity for bringing such less known varieties together for purposes of comparison and instruction.

AMONGST THE TREES AT ST. JOHN'S NURSERY, WORCESTER.

WHILE the trees are still in the full glory of summer foliage, and the tinge of autumnal beauty is only just perceptible, is an excellent time to see and compare one sort with another, and to obtain a sufficiently clear idea of growth, foliage, and habit, and of the relative value of sorts, new and old, to enable one to make a judicious selection for the planting season, which will soon be with us once more. Such was partly my object. I went to Worcester to select trees for planting in Leicestershire, where I am engaged

in the very interesting work of the restoration and improvement of an old family seat, one of several which once belonged to the family of its present owner who has recently acquired it, and with whom, therefore, it is a labour of love to restore and make beautiful an estate which was the inheritance of a long line of ancestors, who lost it, and many another fair domain, for the sake of that "trouthe and honour" which was the guiding star of old Chaucer's "Verray perfight gentil knight."

Down in a valley stands the fine old Tudor mansion, and from it ascend gently swelling uplands, which rise and fall in picturesque contours, and which it is intended to clothe sufficiently with timber trees to impart to it the beauty and dignity of a true English park, with its avenues, glades, clustering trees, specimens—detached, yet so entirely a part of the whole, so contributing to the general effect as to be indispensable to its completeness and entirety.

With such an object in view went I to the famous Worcester nurseries, and certainly I was well rewarded for my journey. I never saw so fine and healthy a collection of young trees, remarkable alike collectively and individually, for though most sorts are grown here by the acre, yet every one of them—aye, even amongst the forest trees—is a perfect specimen: clean, symmetrical, in robust health, and full of growth, which is so free and vigorous that it was not till I saw one of the largest trees lifted with its densely clustering fibrous roots that I realised how fully, how thorough, is the system of transplantation at St. John's, and why the trees from this nursery are removed with such safety and answer so well.

Turning now to the trees, the Elm must have the first place because it is the pride of Worcestershire, where it is seen in all the majesty of full development, and is certainly a most stately tree, whose noble proportions rival those of the Oak, and whose effect as a timber tree is entirely satisfactory. One old giant which I saw on Lord Beauchamp's property near St. Cloud, the residence of R. Smith-Carington, Esq., was probably fully 30 feet in circumference; and in Mr. Berkeley's park near Worcester I saw an avenue of Elms about 200 years old, the trees of which are equally remarkable for size as well as for uniformity of growth. But fine Elms abound in Worcestershire, and there are trees at the nursery 50 feet high that were planted well within living memory, and are regarded as somewhat remarkable from the free manner in which they have continued to grow, notwithstanding the frequent disturbance of the soil right up to the stems. This is the true *Ulmus campestris*, or English Field Elm, and there is a large stock of it at the nursery, from which enough will be selected to plant an avenue a mile and a half in length on the Leicestershire property. The large stock of Wych Elm and the Huntingdon or Chichester Elm showed that both sorts are much in demand, and of other highly ornamental sorts there are *campestris aurea*, *plumosa*, *pyramidalis*, *Dampieri aurea*, the Wheatley Elm, and the silver variegated variety of *campestris*.

Of Oaks, I saw a very interesting collection of upwards of forty varieties, several of which are highly desirable for mixed clumps. Fine tree as the common English Oak undoubtedly is, we can have too much of it. A park with the timber principally of fine old Oaks is certainly a remarkable sight, but the effect of even such trees is tame and insipid in comparison with that evolved by tasteful mixed planting. Take, for example, Whittlebury Park in Northamptonshire, where there are hundreds of old Oaks, every tree a fine specimen, yet it was with a delightful sense of restful relief that one turned from them to gaze through a vista of the tapering forms and soft feathery foliage of Douglas Firs to the lofty clustering groves of stately Stow in the distance.

The Turkey Oak is a tree one would like to see more frequently, for it has a singularly elegant and refined appearance, to which its habit of growth, foliage, bole, and even the bark all contribute. It grows freely in a deep loam, and soon tells in effect, especially as a detached specimen. There are cut-leaved and variegated forms of it at St. John's, both worthy of a place in belts and clumps. Most beautiful is the Scarlet Oak, as the leaves change from summer greenery to the brilliant hue of autumn whence it derives its distinctive title. A mass of it will now soon be all ablaze with colour. How wonderfully effective it is on a hillside among feathery Larches or the deeper hues of Scotch and Austrian Pines. It is deservedly popular, as the fine stock of it at the nursery showed, but its position must be chosen with due regard to effect at this season of the year. Of the other sorts which attracted my attention by the size or form of their foliage, I select as especially worthy of planting *macrophylla*, *pectinata*, *americana discolor*, *latifolia dentata*, *tinctoria*, *villosa*, *Prinos*, *Louetti* and *olivæformis Hampteri*.

Most tempting was the appearance of the Maples, with their handsome foliage and luxuriant growth. The entire collection well repays one for close inspection, most of the varieties being worthy of a place, and especially so are *Acers macrophyllum*, *Schwedleri*,

lutescens, heterophylla, the Norway Maple and the purple leaved Sycamore. Planes, Poplars and Limes, too, are all evidently in large demand. Caution is necessary in planting the first two, for Poplars are apt to become too obtrusive, and Planes are not suitable for cold heavy soil or low damp situations. Plant them there, and the most frequent result is the curious anomaly of a few healthy trees whose growth is entirely satisfactory, and many sickly ones with branches destroyed by frost, or roots perishing in a sodden soil. Yet I have seen fine Planes low down on the slopes of a valley that had been sufficiently sheltered when young to escape damage from frost, and once above the frost line they were safe from check or damage from atmospheric influences. The soil was an alluvial deposit that evidently suited them; for in sixty years they had become fine timber trees of such stately appearance as to show how effective a grove of them would be if they were planted far enough apart for individual development.

To all readers of the Journal who intend planting trees in forest, park or orchard this autumn, I say Go to St. John's and see the trees now, and especially try and see the Acers, the Corstorphine Planes, Silver Lombardy Poplars, Acacia Decaisneana, which grows faster than the ordinary kind and has pink flowers, the Purple Plum (*Prunus Pissardi*) with its rich purple foliage, the Golden Elms, Purple Sycamores, the Silver Spruce (*Abies Parryana glauca*), the Silver Cedar (*Cedrus atlantica glauca*), and pray do not forget the Hollies. Never before had I seen such a magnificent lot of Hollies of all kinds, every one of them an example of careful cultivation, all of them symmetrical, healthy specimens, and yet they are but an example of everything else here where the aim is perfection, and the result a very close approach to it.—EDWARD LUCKHURST, *Warrens, Harold Wood, Romford.*

TAINTED FRUIT.

It is a fact not perhaps generally known that it is possible to spoil the flavour of almost any kind of fruit grown in this country. No fruit that I am acquainted with is more susceptible of injury in this respect than the Strawberry. Who has not, at some period of his gardening career, discovered that the greater portion of a crop of this favourite fruit has been spoilt by tobacco fumes, the fumigation in some instances actually taking place before the fruit is half ripe? When once the fruit has become tainted in this manner it is spoilt beyond recovery. A too free use of strong-smelling manures is also liable to injuriously affect the flavour of Strawberries, and the more pure and airy the atmosphere is kept during the ripening period the better will the flavour always prove. If it is advisable that the surroundings of ripening Strawberries should be kept as sweet as possible, it is absolutely necessary that the ripe fruit, after it has been gathered, should not come into contact with anything that smells in any way, and above all should not be packed in scented boxes, or a flavour foreign to it will inevitably be introduced.

Peaches are nearly or quite as liable to be spoilt by contact with any scented substances, and though I have never tasted any fruit flavoured with tobacco, I should be sorry to risk anything by fumigating a house containing a crop of Peaches and Nectarines after the final swelling had commenced. But if instances of fruit having been spoilt before it was taken from the house in which it was grown are rare, I have frequently tasted both Peaches and Nectarines which were badly tainted, owing to the fruit either resting on or being packed in scented material or boxes. As a rule our fruit, according as it is gathered, is laid on sheets of cotton wool covered with clean packing paper. This season we are using wood shavings—a new packing material—this smelling like newly cut deal when first opened out. Ripe Peaches and Nectarines were laid on without a paper covering for about four days, and at the end of that time were badly tainted or nearly spoilt. Even moss is apt to impart an earthy flavour to Peaches; and on the whole cotton wool, though not perfect, is the least objectionable material for packing this class of fruit in. In any case, it is imperative that every fruit be carefully and completely folded in soft tissue paper prior to surrounding it by other soft springy material. Enclosing the fruit in paper will not, however, prevent injury accruing to it if scented boxes of any kind are used, and I shall never forget tasting a Peach that had been kept in a fragrant soap box for about twenty-four hours. What holds good with regard to Peaches and Nectarines is equally applicable to Figs, the flavour of these being very easily tainted, and nearly as much care must be taken of Melons, or they will be spoilt.

Many years ago I was under the impression that when a noble lady asserted she could detect the flavour of almost any kind of material used for packing Grapes, and the bunches had to be packed in Lime leaves whenever these were procurable. Since that time I have had good reason to think there was "something in it," as it

has forcibly come home to me that Grapes can be more easily tainted than many gardeners are aware. With their smooth and apparently non-porous skin, it might be imagined that the berries are impervious to tobacco smoke even, but such is not the case. Instances could be given where fumigating was resorted to after the Grapes were nearly ripe in order to check the spread of thrips, and it was subsequently found that the crop was spoilt, all the bunches being badly tainted by the tobacco. That Grapes are among the least susceptible of injury from odours of any kind I readily admit, but maintain that no risks should be run, and that the packing material and boxes used should be of a non-scented character.

With regard to most of the fruits just mentioned these remarks are not particularly opportune, but when we come to Apples and Pears the case is different. There are far more of these in many parts of the country than is generally known, and even if there were fewer this would be a stronger reason for taking good care that they should not be spoilt in any way. Apples are remarkably porous, and the flavour may be spoilt in a few days, yet very few growers appear to be aware that such is the case. I have before mentioned in these pages, having once had to take part in the tasting of about sixty dishes of fruit staged at a November Show at Bath, the class being for a single dish of any variety, to be judged by flavour; but of that number 75 per cent. gave only too strong evidence of having rested for some time on straw. Worse material for the fruit to rest on could not well be selected. At the outset it may be sweet and fresh enough, but it is not long before the moist fruit causes it to become musty, and in a short space of time this disagreeable flavour is communicated to the Apples. Not merely should the material on which the fruit rests be clean and sweet, but the surroundings ought to be equally so. Dark musty sheds, disused Mushroom houses, dirty badly ventilated cellars, and other makeshift storing places are apt to spoil the flavour of both dessert and culinary fruit, and should be avoided as much as possible accordingly. A clean room, with newly whitewashed ceilings and walls, and the boards and shelves covered with fresh kitchen paper, will not injuriously affect the flavour of the fruit stored in it, and such ought to be connected with every garden. Failing these Apples keep admirably and without detriment to the flavour in clean boxes or paper-lined hampers stored in dry rooms. None but sound fruit being placed in them the lids may be put on, and no further trouble beyond protecting from severe frosts need be taken with them.

It is my impression that Pears are scarcely so porous, and therefore not so easily tainted as Apples; but whether this is so or not there is yet every necessity for storing them amidst sweet surroundings, and also for packing in unscented material and boxes. They do not suffer for a few hours' storage or transit in soft sweet hay, always providing each fruit is wrapped separately in a square of clean paper, but on no account should hay any more than straw be used as a bed for resting Pears on in the fruit room. In many instances nothing but latticed stagings or shelves are used for the storage of single layers of fruit, but I have a weakness for the boards to be covered with fresh kitchen paper, especially in rooms where there is no possibility of excluding severe frosts. Paper below, and more on the top when necessary, will frequently prevent injury from frosts, and if need be cotton blinds can also be used without tainting either Apples or Pears.—W. IGGULDEN.

THE CARNATION.

[Read before the Sheffield Floral and Horticultural Society by Mr. F. Hardy.]

PROPERTIES OF A GOOD CARNATION.

CARNATIONS are divided into three classes—namely, bizarres, flakes, and selfs. The flowers of a good Carnation should not be less than 2½ inches across; the guard or lower petals, not less than six in number, should be broad, thick, and smooth on the outside, free from notch or serration on the edge, and lapping over each other sufficiently to form a circular Rose-like flower. The more perfectly round the outline the better. Each layer of petals should be smaller than the layer immediately under it. There should not be less than five or six layers of petals, laid regularly over each other, and the flower should be stiff and slightly cupped. The stripes or markings should be clear and distinct, and not running into each other. The ground colour must be perfectly clear, and the other colours must be bright and clear, whatever variety they may be; if there be two colours the darker one cannot be too dark, or form too strong a contrast with the lighter. That is a great point in an exhibition bloom. If the colours run into the white and tinge it, or the white is not pure, the fault is very great. The pod of the bloom should be long, to enable the flower to develop without bursting it; but this is a rare occurrence. The best way is to tie each pod half way up, and open each section down to the

tie. There are a few varieties that do not require this, but they are very few. I do not consider it necessary to give a list of varieties, as there are so many good lists in the catalogues and journals that it is a very easy matter for anyone to make a good selection.

PROPAGATION.

There are three ways of propagating—viz., by seed, layers, and by pipings or cuttings. Taking them in the order named seed is the first to be considered. We have in the first place to procure good seed. I recommend saving seed, and only from the best blooms that produce seed. It is not every bloom that does produce seed, but you should endeavour to make the purest, clearest, and most distinct flowers, for by so doing you save time and labour in not having to weed out so much from the seedlings, because, no matter how carefully the flowers are selected, there will always be a large proportion of worthless seedlings. The less the number of seeds in a pod the more likely are they to be of the best quality and to give good results. Seed is always scarcer in pods from double flowers, or in pods containing seed that will produce double flowers. The seed should be gathered as soon as ripe, and if not sown at once it should be kept in a cool dry place. It is better to sow it as soon as gathered, for two reasons—first because it germinates more quickly, and secondly the strongest plants raised will bloom the first season, whereas if it is not sown until spring flowers are not produced until the following year. Sow the seed in pans or boxes according to the quantity, and place these in a humid temperature. As soon as the seedlings appear they should be placed near the glass in a greenhouse, and when large enough pricked out into boxes in a rich compost, such as loam, leaf mould, sand, and a little dried horse droppings in proportion. They can remain in the boxes until early spring, when they may be planted in a well-prepared bed, remaining until they flower, when the finest varieties should be marked and the rest discarded, though the best of them may do to brighten some dark corner.

PROPAGATION BY LAYERS.

A layer is a shoot brought down to the ground, and when rooted separated from the parent stem. This is a simple and perhaps the safest way of increasing the stock. I need not make any remarks about the way it is done, as it is an old practice, and no doubt familiar to all. The soil used for placing round the layers, when they are cut and firmly pegged down to the ground with a hooked peg, should be fine with plenty of sand in it. After the soil is placed round the layers should have a slight watering, and the business is completed until they are rooted, when they may be taken up and potted, either two small ones or one strong plant in 60-size pots, and placed in a cold frame, care being taken not to keep them too wet, and plenty of air should be admitted on all favourable occasions.

PROPAGATION BY PIPINGS OR CUTTINGS.

This mode of increasing the stock is very simple, but not so safe as layering, and should only be practised when it is desirable to propagate largely, and there are more shoots on a plant than can possibly be layered. It is a good practice to make up a gentle hot-bed for the purpose of plunging the pots, in which the cuttings are inserted round the edges. The pots must be well drained and filled to within an inch of the top with fine soil, the remaining space to be filled with silver sand. After the cuttings are inserted give them sufficient water to settle the soil around them, and keep them shaded from the sun until rooted. It is easy to tell when they are rooted, as they begin to make new leaves. They should then be potted and treated in the same way as described for layers.

SOIL.

A good compost for pot plants consists of two parts rich fibrous loam, one of leaf mould, half of sand, and half of well dried horse droppings, not old Mushroom bed manure, as that is liable to cause fungus. These materials well mixed together will form a suitable compost. With regard to manuring ground intended for planting Carnations, the nature of the soil should be taken into consideration; if it is heavy ground, well dried horse droppings would be the best manure, but, on the other hand, if the ground is light, well dried cow manure would be the best. It is also good practice to prepare the ground in autumn for planting the following spring, as this allows the rankness, if any, to escape from the manure.

CULTIVATION IN POTS.

Besides being effective in borders and beds, Carnations are equally attractive when grown in pots for the embellishment of the greenhouse. Many people have their own fancy with regard to the size of the pot they use, and as a matter of course each size has its own advantages. For my own part I like to grow them in 8-inch

pots, four plants in a pot. By growing four plants together a greater mass of bloom is obtained, as each plant only sends up one flower stem. If the bloom is intended for exhibition two plants in an 8-inch pot will be quite sufficient, and all potting should be completed by the beginning of April. One great point in the cultivation of Carnations in pots is to have the pots properly drained; the drainage should be at least 1 inch deep, and well protected by the roughest materials of the compost. After potting the plants should be placed in a cold frame with plenty of ashes in the bottom for the pots to stand upon, so that the plants are well protected from worms and slugs. The reason I advise them to be placed in cold frames is that in case of heavy rains the lights, which may remain off altogether in favourable weather, can be easily placed over the plants. A gentle rain, however, will do them no harm. At all times they require careful watering, and occasionally a little weak liquid manure may be given them when they appear to require extra support.

When the flower stems appear they should be staked, great care being taken in tying to give them sufficient room, so as to enable them to grow to their full length without forming knees or bent joints; if this happens they will most likely break off at the affected part. When the flowers begin to expand it will be necessary to give them a little shade from bright sunshine, and to look after the pods to see that they do not burst. These should either be tied as before mentioned, or, better still, procure a few small indiarubber bands, which are sold for the purpose by most nurserymen.

With regard to thinning the buds, you must take into consideration what they are wanted for. If for exhibition blooms, select two or three of the strongest on each shoot; if to be shown in the pots as they grow, leave six or seven pods; and if for home decoration and cutting, leave them all.

During the discussion which followed the reading of the above paper, Mr. Collier said the Carnation was a favourite flower for buttonholes, and recommended the following varieties:—Laura, with large pink flower, one of the best bloomers in pots; Miss Joliffe, grown largely by market people; White Swan and La Belle, both very good whites.

GROWING AND SELLING FRUIT.

(Continued from page 240.)

STRAWBERRIES.

NEXT to the Apple this is the most profitable fruit for the small grower and cottager, if he is near a town where he can dispose of his crop. This makes all the difference between profit and no-profit, Strawberries having to be sold quickly after they are gathered, twelve hours being quite long enough for them between gathering and eating. This is also a crop in growing which the cottager's wife and children can render very great assistance by gathering the fruit, cleaning the plantation of runners and weeds, putting straw under the fruit to keep it clean, scaring away birds, catching snails, &c.

SOIL.—The Strawberry is perhaps the best of all fruits in this respect, as with care and attention it will grow in any kind of soil, even in those that are chalky, although it is not advisable to plant many in doubtful places until a few have been tried to see whether they will perfect enough fruit to render them a source of profit. The best soil for them is a rich, deep, and moist loam, but any good deep soil will do if well manured before planting. They may be grown among the standard Apple trees, or in an open spot by themselves; and a warm bank, where many other fruits would not succeed, will often grow good Strawberries with proper care and attention.

PLANTING.—The rows should not be less than 2 feet apart to allow room for gathering, and for a small horse hoe to work amongst them if the plantation is large enough. If the soil is very rich 3 feet apart will be a better distance, and the plants 2 feet apart in the rows; in poor soils the latter distance may be reduced to 18 inches. It is sometimes advised to plant much closer than this, but unless the soil is very poor—in which case Strawberries will not pay for growing—it is not a good plan to do so, because if a wet season occurs the fruit cannot become dry quick enough, and soon decays. It is a bad plan to dig among Strawberries after they are planted; the ground should therefore have plenty of manure, and be well dug some little time before planting. The small plants at the end of the runners are the best for making new plantations, and where only a few thousand are required they should be specially prepared before they are cut off. The best way is to get some 60-sized flower pots, fill them with good soil, lay the runners on, and put a stone on the top, keeping them well supplied with water; but the cottager will seldom have flower pots

at hand in sufficient quantity to follow this system. Another way, almost as good, is to cut some turves 2 inches thick and 12 inches square about the end of May, and stack them in rows four or five deep, with the grass downwards; this will kill most of the grass. About the first or second week in July the runners will be ready to commence rooting. Cut each turf into nine pieces, lay one of these down for each young plant, scoop a little of the earth out of the centre (the grass side being downwards), lay the young plants in, cover the earth over the lower part of it, and place a stone on the runner to keep it in its place. These should have water every day if the weather is dry, and placing the turves close together in lumps renders watering much easier. In about a month they will be ready to cut off the old plants for planting out in the new plantation; this is best done in showery weather. They should be planted very firm, putting the pieces of turf in the ground with the young plants, and ramming the soil around them with a wooden rammer. The earliest varieties should be planted in the most sunny and warm portion of the ground, and the later ones where they will be cooler, thus prolonging the season as much as possible. They will not require any other attention until the following spring beyond keeping them clear of weeds and removing all runners as soon as they appear. If an acre or more has to be planted the grower may not be able to take all these pains in raising the young plants; in that case the runners may be cut off the old plants and planted during showery weather, and will eventually do well; but a year's crop is saved by preparing the runners properly, and on the principle of quick returns it is always best to have good plants at first, as they will then give a crop the first summer after planting.

CULTIVATION.—Early in spring, as soon as the ground is dry enough, the hoe should be run through the plantation to destroy all weeds, and this should be repeated as often as necessary until the flowers begin to show. They will then require some short strawy manure placed all round to protect the fruit from being spoiled by the rains, and to prevent the land drying up too much in hot weather, the nourishment from the manure will be washed down to the roots by rain and assist in swelling the fruit. If manure cannot be had, grass cut from the roadside will do, but it is not so good as straw, as it encourages snails more and is not so apt to take root and grow; also, it does not enrich the ground so much as stable manure.

GATHERING AND MARKETING.—As soon as the fruit becomes red and before it is over-ripe it should be gathered. This must be done when it is perfectly dry. The pickers should, therefore, have work near at hand until the dew has passed off. If Strawberries are gathered when damp they will not look rich and glossy when they reach the market, and if they are required for preserving purposes the jam does not keep well, but goes mouldy. Fruit for eating should be gathered into 1-lb. flat punnets, these can be had from the market salesmen at 6s. per gross. A few leaves should be put into the bottom and round the sides, or one small Cabbage leaf laid in each basket is better still if it can be had. Do not gather any small or decaying fruit. Make each basket as near 1 lb. in weight as possible while gathering, then weigh each one and send to market or to their destination as soon as possible. They travel best if the punnets are placed in boxes 21 inches by 34 inches and 22 inches deep, inside measurement. These should have a small ledge on two of the sides for a false bottom to rest on about 4 inches from the box; this false bottom should be made of strips of deal three-eighths inch thick, long enough to reach the small ledges at the sides. One ledge should be fixed at 4 inches from the bottom of the box, the next at $8\frac{1}{2}$ inches, the next at 13 inches, the next at $17\frac{1}{2}$ inches. A box of this size and form will hold five layers of punnets, fifteen in a layer, that is 75 lbs. of fruit. Before the false bottoms are placed in position each layer of fruit should have two or three Rhubarb or Cabbage leaves that are perfectly dry laid over them to keep the fruit from shaking about in transit. Everything should always be kept perfectly dry, this is very important; the stalks and midribs should be taken out of the Rhubarb leaves before putting them into the box. The boxes should be fitted with handles and lids with locks, &c., and be sent off in spring vans, or if by rail arrangements should be made with the porters that they are not knocked about. Preserving fruit may be gathered in the punnets and emptied into glazed earthenware jars holding 18 to 24 lbs. each; these should then be packed and sent to their destination without any of the juice being lost; the smaller fruit does for this purpose which would not be suitable for dessert use; they should always be gathered without the stalks for preserving. Where there is a good demand near the provincial towns, Strawberries generally fetch good prices. Selected fruit very early in the season will often fetch 1s. 6d. per lb., coming down to 1s. when they get more plentiful, and afterwards 8d. and 6d. The next size will range from 8d. to 5d. per lb., and preserving fruit should generally bring 3d. to 4d. and 6d. per lb., according to the crop. An acre planted 3 feet

apart by 2 feet will yield about 1000 lbs. the first season if the ground is rich and the plants are specially prepared before planting, increasing to 3000 lbs. the third year. These should be worth £50 clear money at an average estimate for well grown fruit, but as actual facts are the surest guide I will give the returns from half an acre of Strawberries which I had to assist in marketing in 1882. From a piece of good rich and deep land not quite half an acre in extent 1501 lbs. were gathered; these realised from 3d. to 1s. per lb., and averaged $6\frac{1}{2}$ d. per lb. (nearly), the total amount obtained being £39 13s. 4d. for the half acre. The estimated average cost of labour for the year was £14 19s. per half acre; this gives a profit of £49 8s. 8d. per acre for freehold land; the season was a very showery one, market was two miles from the place of growth, the sorts were chiefly Vicomtesse, Burghley President, Sir C. Napier and Oxonian, and the age of the plants varied from one to three years, so that this may fairly be taken as an average result under high cultivation. After the third or fourth crop has been taken (according to the soil and condition of the plants) it is better to chop up the plants and plant afresh. When all the crop is gathered, if the weather is not too hot and dry and the runners are not wanted, the mulching should be cleared off. If left too long around the plants the labour of clearing off the runners is increased tenfold, as they soon obtain a strong roothold in showery weather, and weeds also grow fast. An old sickle or similar hooked knife should be passed round the plants to take the runners off, leaving every leaf entire on the old plant. The straw and runners, &c., should then be collected and burnt, and the horse hoe worked through to loosen the surface and keep down weeds as often as necessary.

INSECTS, &c.—The enemies of the Strawberry are not numerous, and may be generally included as snails, mice, or birds. The two former must be searched for and killed, and the latter frightened away or kept off by means of netting placed over the plants. In large open plantations a youth with a gun should be able to keep them away if on the spot from daylight to dark.

VARIETIES.—The best market varieties for profit at the present are Laxton's Noble, Burghley President (this will not do in poor dry soils, but is one of the best where the soil suits it), Sir Charles Napier, Sir Joseph Paxton, and Oxonian. They are mentioned in their order of ripening, but, as stated at the commencement of this paper, it is not possible to give a list of Strawberries that will succeed everywhere, as different soils affect them very much, but with the exception of Burghley President I have never known any of the above sorts to fail, either in the north, south, or midland districts.

MANURE.—To obtain large fruit that will sell readily plenty of manure is necessary. That from a cowyard is the best, and if a good dressing of twenty tons to the acre is given before planting they will not, as a rule, require any more for the three years they are growing; but if they show signs of becoming weak a good dressing of guano may be given early in spring before the flower trusses appear, and the hoe worked over after to cover it in as soon as possible. Sewage is one of the best manures to secure large Strawberries, but should never be applied after the flowers commence opening.—W. H. DIVERS.

(To be continued.)

VIOLETS.

WHILE agreeing with "I. M. H." that for market purposes a great number of varieties is a mistake, I think that he errs in the opposite direction by recommending growers to stick to only two sorts, Marie Louise and Comte de Brazza. After an experience of many years I may safely say that the pale lavender-coloured De Parme is quite as indispensable as the other two named above, and with ladies, as a rule, a much greater favourite. Another beautiful form of the Neapolitan is Madame Millet, rose coloured with a white eye. This has the true Neapolitan fragrance, and looks very well by lamplight, which is not the case with purple-shaded Violets. The above four sorts are free growers and bloomers, and "will pay;" but among the numerous readers of this paper comparatively few care about the "will pay." The true florist does not measure his satisfaction by the £ s. d. standard. His "pay," and it is good pay too, is the delight of witnessing the wonderful variety of form and colour which Nature contains in her inexhaustible storerooms. Gold and silver will not purchase the intense interest and delight which he experiences when, after much entreaty and waiting at the gates of her house, she is induced to thrust forth some new bewildering form of an old familiar plant. No amount of argument will ever convince a true lover of Nature that he can have too many good varieties of one species, be they Roses, Carnations, Orchids, or Violets. So, as I am writing about the last-named, let me mention a few other double varieties that are well worth growing.

First among the Neapolitans there is the true old palest lilac sort, with many still the first favourite, as there is no other quite of the same

delicate tint. Duchess of Edinburgh is perhaps the nearest approach to it, and comes next in order of interest. New York is another, somewhat like Marie Louise, but a trifle darker and rather a stronger grower. All the above require the protection of a frame in winter to see them at their best. Among the hardier double varieties which bloom well in the open ground are Patrie, an all the year round Violet, of a deep purple colour; in a damp summer like the present there are always flowers to be found on it, and every other month in the year, autumn, winter, and spring. Belle de Chatenay cœrulea and Carter's Mazarine Blue are also fine dark blue Violets which bloom in spring only. Victoria (Chambers') is perhaps the finest of this class, and it has the merit of blooming freely after the frame Violets are all over; the colour is a brilliant deep blue, and the flowers are produced in great profusion. Blandyana is another very distinct variety, striped red, white, and blue. Double red Russian is also interesting. There is no really good double white Violet except Comte de Brazza. Belle de Chatenay and La Reine are only called white by courtesy, being nearly always much tinted with purple. Among single Violets I can speak most highly of Willsiana, sent out some few years since by Mr. Charles Turner; it is the earliest to bloom of all the single purple sorts, and the flowers are very large, well shaped, and fragrant, with fine long stout stalks. Other good purples are Czar, Russian, Victoria Regina, and Odoratissima, the last named the bluest of all, and very fine late in the spring. I have one or two sorts of singles obtained from a French raiser, which are very fine, especially Sans Pareille and Gloire de Bourg la Reine, the latter a very beautiful clear blue colour. The best white is White Czar. The reddest Violet is Odorata rubra, very rich deep rose. A perpetual bloomer is Argentæflora, purplish white. As to cultivation no one can do better than follow the directions of "I. M. H."—R. W. BEACHEY.



DEATH OF MR. WILLIAM HOLMES.

WITH the deepest regret we have to announce the somewhat sudden death of Mr. William Holmes of the Frampton Park Nurseries, Hackney, and Honorary Secretary of the National Chrysanthemum Society. This sad event, which will come as a most painful surprise to a large number of readers, occurred on Thursday morning, September 18th, after a few hours' illness, for Mr. Holmes was attending to his business on Wednesday morning. It was known to his friends and to some members of the National Society that he had been suffering from diabetes for several months, and last year he had a severe illness, but of late he had seemed to recover his usual energy, and he returned early in September in excellent spirits from a holiday spent with his family at Lowestoft, to complete the arrangements of the Chrysanthemum Centenary Festival, and to undertake the management of the September Show of the National Society at Westminster. Numbers of his friends who saw him at the last named Show heartily congratulated him upon the apparent improvement in his health, and hopefully anticipated a busy and pleasant season in his company, wishes that were doomed to be unfulfilled.

Mr. Holmes was just in the prime of life, being only thirty-eight years of age; he had for a number of years taken a prominent place in the horticultural world, and was widely known and respected. In early manhood he succeeded to the charge of his father's nursery at Hackney, and speedily gave proof of his ability as a practical horticulturist and skilful manager by considerably developing its resources. He applied himself specially to landscape and contract work, and acquired an excellent reputation for taste in design and promptitude in execution. Several of his more recent works have been referred to in this Journal, notably the garden in connection with Dr. Barnardo's Homes in Essex, and the Vauxhall Park, of which a plan was given on page 21, July 10th this year. On the occasion of the opening of the Park just named Mr. Holmes had the honour of being presented to the Prince and Princess of Wales by the Princess Louise, and was personally complimented upon his share in the work.

It was chiefly in his connection with the National Chrysanthemum Society, however, that Mr. Holmes was known to the horticultural world generally, for to this Society he had devoted a large share of his time and attention, and what may be termed the modern history of the Society is really a portion of Mr. Holmes's career. In the year 1877 the Borough of Hackney Chrysanthemum Society required an Honorary Secretary, and to this post Mr. W. Holmes was elected, with the result that an energetic course of action quickly changed the character of the Society, and rendered it of much more than local importance. The shows were removed to Westminster, and in a few years the number of members rose from fifty-two to 200 in all parts of the country, which amply justified the adoption in 1884 of the title "National." A vigorous policy has maintained the progress, and at the present time there are upwards of 700 members, while the income of the Society is something like £900. Two provincial shows have been held, one at Sheffield, and the other at Hull, a Floral Committee

was formed, a catalogue of Chrysanthemums was issued, and in several other ways the "National" has endeavoured to render useful service to the growers and admirers of Chrysanthemums. It is only just to say that most of these ideas originated with Mr. Holmes, and he assisted very greatly in their development. His counsel and guiding power will indeed be sadly missed in the deliberations of the Committee. Few but those who have been intimately associated with him in the work of recent years can adequately judge the time and thought he devoted to the various details and projects. He was thorough in all his undertakings, and he spared no personal effort to ensure success.

Recognising the valuable assistance rendered to the Society by Mr. Holmes, a fund was raised in 1886 for the purpose of according him some recognition, and at the annual dinner of that year he was presented with an illuminated address and three silver epergnes, when Mr. Sanderson referred in feeling terms to the career of his friend. It had already been suggested that the Centenary Celebration would have been a fitting opportunity for another presentation, as he had seriously talked of resigning at the end of the year duties that were undoubtedly imposing too heavy a strain upon his health.

Mr. Holmes was a devoted horticulturist, a Fellow of the Royal Horticultural Society, a member of the Floral Committee of that Society, and a frequent judge at autumn shows; but he did not confine his energy to these, for he took a prominent part in local affairs, was chairman of a political association; in 1888 he was elected Chairman of the Overseers for the parish of Hackney; he was also connected with a building society, and had taken office in the Freemasons.

Our friend has left a widow and six children to mourn the loss of an affectionate husband and father, and many associates who will unite in the heartiest sympathy with them, have also to regret the loss of a true friend and a worthy man.—LEWIS CASTLE.

CHRYSANTHEMUM MADAME DESGRANGES.

AUGUST and September are two months when flowers for the conservatory are scarce, and although this defect may be somewhat made up by using foliage plants, still they do not wholly make up for a sparsity of flowers, neither do they command the admiration, especially from the ladies, that flowers do; therefore, plants that will develop their flowers during these months, and that will bear the ordeal of a cool airy conservatory with impunity, are of great service, and is sure to be appreciated. Chrysanthemum Madame Desgranges, and its primrose-yellow sport G. Vermig, have been in cultivation for some years, but it is not grown to the extent that its intrinsic merits entitle it to be, neither is it often met with grown to a very high state of perfection. Its habit is free, dwarf, and bushy, and a plant 2 feet 6 inches high, with twenty-four shoots carrying as many perfect flowers, is a thing of beauty at any time, but particularly so during August and September when arranged in the conservatory amongst plants which at that time are so totally distinct.

To grow these Chrysanthemums into good bushes for the above purpose, strong cuttings should be secured about the middle of October, preference being given to those springing from the roots, and place them singly into small thumb pots, using loam, leaf mould, and sand in equal parts. Plunge them in a half-spent hotbed, and keep them close until rooted, only admitting sufficient air to dispel superabundant moisture, and thus prevent damping. When rooted, they should have abundance of ventilation during favourable weather, and keep them near to the glass, so as to induce a short-jointed, stocky growth, nothing being so detrimental to Chrysanthemums as "coddling" at any stage. Grown under airy, bracing conditions, they will bear a few degrees of frost without injury, and although the growth will be slower, yet in the spring the plants will possess far more stamina than those grown under close, warm conditions, and may, moreover, be placed out of doors a month earlier in spring. When the plants have grown about 6 inches pinch off 2 inches; this will induce them to throw out a number of side shoots. Select three of the strongest, and rub off all the others. At this stage, which will be the end of November, they will require placing into 5-inch pots, using a compost of three parts fibry loam, and one part each of well decayed manure, leaf mould, coke, and sand, adding one quart of bonemeal and soot to each bushel of compost. They should be potted firmly and returned to a cold frame with a south aspect, if possible, and as the days are short and damp they will not require keeping close, neither will they require watering for at least a fortnight, and every opportunity should be taken to give air, and on mild days to remove the lights entirely. During very severe weather the lights may be covered in the usual way, but, as before hinted, a little frost will not hurt the plants. Damp, however, must be expected during the dull days of winter, but this can be largely obviated by making a wooden slatted stage for the frame, and arranging the plants on it near to the glass, giving them plenty of room. Watering also should be attended to during the early part of the day. Early in February the shoots should again be pinched back and two growths selected from each, which will give six shoots to each plant. Early in March place them into their largest pots, using 8-inch size for the smallest plants, and 9-inch for the largest. Employ the same compost as before, only in a rougher state, with a few half-inch bones mixed with it; also put a layer of half-inch bones and soot over the drainage. If the compost is in the right state—that is, not so wet as to remain in a sticky ball, or too dry to show the impression of the fingers when squeezed in the hand—it is impossible to pot Chrysanthemums too firmly; it induces a short-jointed, sturdy growth, which invariably results in good flowers, other things being equal. Good drainage is also essential, and 2 inches should

be left for a rich top-dressing as soon as the buds are set. As the days lengthen they will make rapid growth, and by the middle of March the shoots should be again stopped, and two more growths secured from each. This will give twelve shoots to each plant. Early in April they may be stood out of doors in a sheltered place, and the shoots secured to thin stakes. Those plants required for flowering early in August should have their shoots stopped early in May, and those for flowering in September a month later, and in both cases select, as before, two growths from each shoot, and rub off all the others; each plant will thus have twenty-four shoots.

When the pots are full of roots the plants should be watered with weak liquid manure, made either from the farm tank or from animal manure, with a little soot added. When the flowers appear remove all except one on the point of each shoot, for plants in 8-inch and 9-inch pots will not develop more than twenty-four blooms to perfection—indeed, they will not do that unless they have been well managed throughout. Each shoot should be secured to stakes reaching about 5 inches above the point of the last break, and top-dressed with equal parts of mellow manure and loam. Gradually increase the strength of the manure water, and continue giving it to them until the flowers show colour, for there is little fear of “damping” when plants are carrying this number of flowers. Just before the flowers unfold remove them to a light cool airy house, as the wet and wind out of doors often soil the blooms and hasten decay. If any of the plants are required for cutting purposes about four buds should be allowed to expand, as although they will not be large perfect blooms they will be found more serviceable for arranging in stands.

Aphides and mildew are sometimes troublesome on Chrysanthemums, but are easily destroyed by syringing with the following mixture:—2 ozs. soda, 4 ozs. softsoap, 2 ozs. petroleum oil, and twelve gallons of water thoroughly mixed, and used at a temperature of 100°. It is a good practice to use this mixture just before the flowers unfold, even if there are no signs of insects, for it often happens that there are invisible germs of insect life lurking about the plants, which only requires the more confined conditions of the conservatory to bring them into activity when it is too late to grapple with it. Many promising Chrysanthemums have come to an untimely end through not taking this simple precaution before housing them.—J. H. W.

CULTURE OF THE PEACH AND NECTARINE ON OPEN WALLS.

[A paper read by Mr. Robert Smith, of Yalding, Kent, at the meeting of the British Fruit Growers' Association, Brighton, September 11th, 1891.]

HAVING been a successful cultivator of these grand old fruits on open walls for the past twelve years, I propose to speak first of the Peach. The Peach is generally considered to be of Persian origin, and is supposed to have been carried into Egypt during the reign of Cambyses, then into Greece, and after a lapse of time into Italy, where it only became known about seven years before the Christian era. The native country of the Peach is, however, still a doubtful point, and as such I may pass it over. It is extensively grown, with frequently but limited space of cultivation, between latitudes 30° and 40° in Asia, Europe, and America. Under particularly favourable circumstances it will succeed considerably beyond these limits, but as its deciduous nature requires a period of rest it is not fitted for a tropical climate. On the other hand, beyond latitude 48° the ground is too cold for its roots, and it will not long continue to thrive unless budded on some hardier species. The Peach also requires the shelter of a brick wall in this country and other protection.

If the summer is hot enough to ripen the wood it will stand a severe winter uninjured in localities where the mean temperature of February is 40°, and that of March 44°. The Peach tree will be in full flower against a south wall the last week in March, but often earlier on warm—that is, dry soils; and if the mean temperature of April is 49°, that of May 55°, June 61°, July 64°, and August 63° the season may be considered a favourable one. The early Peaches will begin to ripen about the middle of July, or a little earlier or later according to the season, whether early or late; and if the trees have been well cared for the fruit will acquire a high degree of perfection.

Our south walls at Kenward are rather extensive, and are 14 inches thick and 10 feet high, are well built, and have an 11-inch board at the top, resting on iron brackets; these boards are easily removed, and are taken down every year about the end of May, and put up again about the end of October. These are the only protection the wall trees get during the spring months while the trees are in bloom, and afford sufficient protection in our case against spring frost, and have done so for the past twelve years. We have not failed to get good crops of the Peach and Nectarine every year of the twelve years mentioned.

In planting a young tree I have about fifteen tiles similar to those used on buildings, placed at the bottom of the hole where the tree is to be planted, and upon these tiles the tree is placed for planting, and then the hole filled up with good maiden loam cut twelve months previously, the soil well trodden in and made firm.

A good mulch of decomposed manure is placed over the top, and then well watered. I prefer the first week in November for planting if the weather is suitable. The shoots of the tree planted should not be fastened to the wall for some time, but in case of high winds the top part of the shoots might be fastened to the wall. But if no danger from winds is apprehended I much prefer the tree left unfastened in any way. In the spring following the planting of the tree the shoots should be nailed to the wall their full length (not cut back as in the olden time); when growth commences in April, take care the new shoots are kept free from insects, upon this being done the future health of the tree depends, and I have no hesitation in saying that many cultivators fail here. Continue to keep the growth of the tree healthy, and towards the middle of April—assuming the newly planted tree is in good health—disbudding might commence by taking the foreright shoots away, and a few from the top part of the shoots. The cultivator should endeavour to have the shoots from the base of the shoots nailed in in the spring to fill up the spaces—the wood for the future use. These spring shoots to be retained for the building up, as it were, of the tree might be kept fastened from time to time to the wall, otherwise high winds are apt to bruise or break off the tops, and sometimes disfigure the tree entirely. Encourage a good growth by all means possible, but it must not be over-vigorous. No liquid manure should be applied the first year. If the tree is healthy it will make sufficiently strong growth. Medium growth is the best for fruiting—this I have proved in trees of all ages to be the best.

Having shown the planting and after-management of the young tree, I propose to deal with older trees, trees of bearing size. The same difficulty occurs in spring with the spring shoots; if these are not kept clean and free from insects the future well-being of the tree or trees is impaired, and so much depends on management that I cannot too strongly enforce this upon the notice of young cultivators who may have other pressing work to do at the same time, not to neglect the Peach trees on open walls, for in a day or two if left unattended insects might cause much injury to the young shoots.

I remove more fruits at the first thinning than many cultivators, in fact I thin early in May, and leave only the number required for a crop. Select the shoots for laying in during the month of July for the future crops of fruit. Many cultivators lay in too many shoots, which is quite a mistake, and yet many do it yearly. So much depends on this operation, that I propose to explain a little here. Take only the best placed shoots, and only the medium sized ones, leave space of 6 inches between each shoot, or nearly so; this space may appear to many too much, and particularly when the cultivator has plenty of good wood to lay in he is often tempted to lay in too much, this is where the mistake is made; 6 inches of space will not be too much for the well-being of the wood or shoots. These shoots must be well ripened before winter, and the 6-inch space between each shoot helps very much to ripen these shoots; the sun and air can reach the surface of the wall to warm the bricks. Every shoot laid in ought to be required for the next crop. My opinion is that much of my success in the cultivation of the Peach and the Nectarine has been through having the wood well ripened.

A few words may now be said about the fruit—that is, the crop that ought to be taken. I find one fruit to every foot of surface of wall to be the right guide, a few more or a few less according to the vigour of the trees. If the trees have been kept clean and free from insects the early Peaches will begin to ripen about the second week of July. I find Waterloo to be an early one, and it does well with us, also Alexander, and then Early York; then comes Hale's Early, which is an excellent Peach for open walls; then I have the latter variety upon a west wall, to come in after the one on the south wall, otherwise I had a break between Hale's Early and Royal George; then Bellegarde and Dr. Hogg; and next comes that highly flavoured Peach, Noblesse; then follow the later varieties, such as Barrington, Late Admirable, and Princess of Wales. We keep up a supply of Peaches daily from July to October. This, of course, can only be done by having a good run length of wall, we have about 200 yards run of south wall at Kenward. If an amateur wishes to grow a few Peaches I should recommend him Waterloo for early, Hale's Early for succession, and Noblesse for midseason variety, and Princess of Wales for a late crop. Nectarines—Lord Napier as early, Rivers' Advance, Elruge, and for a late one, say Pitmaston or Pine Apple.

When the fruit of the Peach and Nectarine begins to ripen the leaves that shade the fruit should be fastened away, so as to expose the fruit to sun and air, or part of the leaves might be pinched off. It is good practice to begin early at this work, before the final swelling of the fruit takes place. I find fruit that has been exposed all through the season are much higher colour, and stand the rough weather better than those fruits not so exposed. Colour is very desirable in Peaches and Nectarines.

It is very important to keep the trees healthy year after year by taking reasonable crops of fruit and wood. The shoots should be well ripened by November. If a spell of dry weather occurs in May, or June, or July, water should be applied at the roots, particularly at the foot of wall, where many useful roots will be found. A few cans of water might be applied there three times a week while the dry weather lasts. I need scarcely say that the water should have been exposed to the sun before being used if possible, and should a long spell of hot weather come a thorough soaking must be given over decayed farmyard manure as a mulch that will help to keep down red spider very much. A space of 3 feet from the wall should be kept firm, not dug at any time, only pricked over and kept free from weeds. I like a little short manure or leaf mould always upon this 3 feet space winter and summer. One more important point is when the leaves begin falling, say early in October, I have all the leaves cleared off and taken away: this exposes the wood for hardening and has more chances of being ripened.

The failures in the cultivation of the Peach and Nectarine of recent years are probably due to the fact that the same care and attention are not bestowed upon the trees upon open walls, as was the case many years ago. Cheap glass has done much to increase the early crops of Peaches, but very few establishments can keep up a daily supply of Peaches from the middle of July until October, as we do, not even with the help of glass houses. A Peach tree with eighteen dozen finely coloured fruits, and every fruit of even size, is a sight long to be remembered; this we have had every year for the last twelve years at Kenward, and during these twelve years there have been many bad seasons for the cultivation of the Peach on open walls. If strict attention is paid to the cultivation the Peach can be as well grown in many places in the south of England as ever it could. This I have proved; but practice and science must ever go hand in hand to insure the best results.

INSECTS.

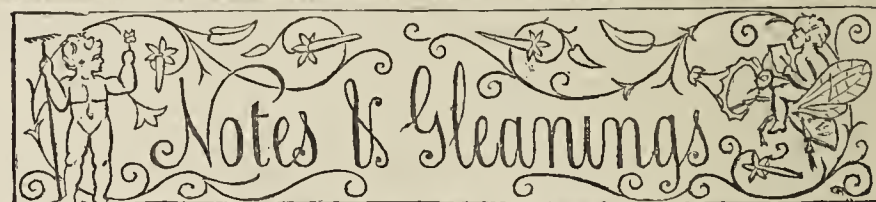
The green and black aphides are often very troublesome in the spring months upon the young shoots of the Peach trees, and unless means are taken to destroy them, these insects will soon injure the growth of the shoots, and if neglected for a very short time will destroy the young shoots. At this stage many cultivators fail with the Peach tree, for if the spring shoots are lost, as very often they are, the cultivator has to wait for the midsummer shoots, which never ripen sufficiently to mature flower buds for the following year. I dwell on this subject, knowing so well that many cultivators fail with the spring shoots. Our Peach tree growth for the season is complete by midsummer, or nearly so; the consequence is, there is length of season to ripen the wood. I am fully convinced that many failures occur from neglect of taking strong measures during the spring months. Curl of the leaves of the young shoots in the spring is often injurious to the growth, but must be removed daily—that is, pinched off and taken away and burnt. Very often an enlargement of the young shoot or shoots will occur from this disease, known as "curl." It is often caused from unripened wood, and sometimes from the ungenial spring weather, and troublesome, more noticeable in some varieties than others. For instance, we have it more in the variety Dr. Hogg than any other with us; but I am in hopes, as the tree becomes older and the wood more ripened, to be rid of it altogether. I clear away all shoots affected with blisters if possible in July, when we make the final selection for laying in the following season's wood.

For destroying the green and black fly we use tobacco powder only, as I strongly object to any liquid at this season for the Peach tree. In fact, I never use any liquid insecticide for the Peach or Nectarine because of the stains these leave on the fruit, and particularly the Peach, which is of a woolly nature in a young state. I caution young cultivators against using liquids in any form if there is any fruit worth considering, either of the Peach or Nectarine.

Red spider is very destructive to the foliage, and if not checked early will soon cause the leaves to fall, and consequently the trees will collapse altogether if the pest is allowed head-way. Syringe with clear soft water every afternoon for a time.

Woodlice are very troublesome. They can be trapped and destroyed. Again, earwigs are most troublesome. I find bean stalks, cut into lengths about 9 inches, placed in and about the branches, and blown through every morning into boiling water, will soon get rid of many of these. I find them more troublesome to the Nectarine than to the Peach, but they are a pest to the fruit of the Peach when ripening, spoiling the face of the fruit if not caught. Often in looking round the trees with a lantern after dark I find the earwig busy eating away the face of Peaches and Nectarines, and the best fruit will be spoilt by them if not caught and destroyed early in the season.

The worst enemy is, I think, the wasp. These noxious insects are very destructive to the Peach, and also to the Nectarine, when ripening. This season we have destroyed 233 queen wasps, and taken 97 wasps' nests up to date—within flying distance of the fruit gardens, many of them in the park meadows and hedgerows of the estate. We wage war against them with a determined spirit, but still they come. Let me give cultivators of the Peach and Nectarine on open walls one more piece of advice; that is, to find out one good cultivator, and visit him during the spring and summer months. I am convinced that much good is done by cultivators visiting each other during the different seasons of the year. If a cultivator in any district can grow the Peach and Nectarine successfully for twelve successive years on open walls, others should be able to do so, remembering that constant attention during the spring and summer months is required.



EVENTS OF THE WEEK.—A meeting of the General Committee of the National Chrysanthemum Society will be held in Anderton's Hotel, Fleet Street, on Monday next, September 29th, at 7 P.M. Business of a very important nature will have to be transacted, and a full attendance of members is desired. At King Street, Covent Garden, and Chancery Lane the usual sales will be held during the week.

— THE WEATHER around London still continues favourable for the time of year. More rain has fallen however, and on Tuesday a rather severe thunderstorm was experienced, accompanied by heavy rain, in the afternoon. The temperature has been high, and the sunny weather is having a good ripening effect on fruit trees.

— THE funeral of the late MR. WILLIAM HOLMES (whose death is recorded in another page) took place on Wednesday last at the Abney Park Cemetery at 3 P.M. There was an extremely large attendance of friends from Hackney, and the National Chrysanthemum Society was well represented by members desirous of paying the last tribute of respect to their able officer. Many handsome floral wreaths were contributed privately, and on behalf of the various societies with which Mr. Holmes was connected. At the meeting of the Royal Horticultural Society's Floral Committee on Tuesday it was unanimously resolved that a message of sympathy and condolence be sent to Mrs. Holmes, in which the members expressed how deeply they regretted the loss of their late associate.

— REPORT OF THE EDINBURGH PLUM CONGRESS.—We have received a copy of the report of the Plum Congress that was held in Edinburgh in September, 1889. It is a closely printed, admirably compiled, and well edited work of 164 pages, and reflects at once the practical and literary ability of Mr. M. Dunn. Selections are given by cultivators of the best Plums for different purposes and districts in Scotland, England, and Ireland, and valuable information is scattered throughout the work. We shall probably refer to it again, and in the meantime ask Mr. Dunn and his coadjutors to accept our best congratulations. The report is published by Messrs. Neill & Company, Edinburgh.

— MALTESE APPLES.—I send you a sample of one of the four varieties of Apples grown in Gozo and Malta. They are cultivated principally in Gozo, and entirely for home consumption, being never exported. I am informed that although four kinds are recognised they are probably reducible to two only. The Apple is called Toffich in Maltese, and the four sorts are—1, Toffich abiat, having a small yellowish fruit of fair flavour; 2, Toffich ta Gian Mattia, yellowish streaked with red, of a rich aromatic flavour, the pulp being spongy; 3, Toffich ta Billudia, greenish with red stripes or blotches—it is seldom eaten raw, and is the variety sent; 4, Toffich ta regina, the Gozo Apple. This is a small very hardy tree, producing large fruits, yellowish green splashed with red. The flesh is greenish white, fine grained, mildly sub-acid and aromatic. The season for Apples is from September to November, and the price from 1d. to 2½d. per pound.—GEORGE HENSLOW. [The Apples are too deficient in sweetness and aroma to be of value for dessert, and they are also wanting in the acidity essential to culinary Apples.]

— UNDER date September 20th, a friend sends the following NOTES IN THE MIDLANDS:—"We have some fine Chrysanthemums, plenty of buds now as large and as hard as nuts. I am taking all the terminal buds on promising plants, but shall leave some plants most of their own way, as we want a show as well as specimen blooms; also some dozens of trained plants, showing a mass of bloom and fine dark foliage through using Thomson's manure, which I most prefer to liquid manure, as it does not encourage rank growth. In the conservatory is a sight worth seeing—viz., a large Bougainvillea glabra, fully a cartload of bloom is hanging from the roof; but for surpassing anything I ever saw is a plant of Gloriosa superba climbing about the stove roof, which is greatly admired by everyone; also some good Tydeas, very pretty and well worth anyone's care."

— "PINES have been very irregular this year, through our having a weak supply of fruiting plants, but the fruits from the increased space have been very fine, and the quality very good, this being remarked at headquarters. In our new Peach and Chrysanthemum house we have some fine Peaches, Nectarines, and Pears. The latter are very bright in colour. They have done well, and are still doing good service for garden parties; and we have also good Tomatoes, somewhat late, but they have fruited well; and the Chrysanthemums will come in shortly. In the late vinery we have extra good Gros Colman Grapes, berries fine and well coloured; but a new one, Mrs. Clarke's Seedling, is much its superior, equally as good in berry and bloom, very heavy, similar to Madresfield Court. We have had to protect the Grapes from wasps; the fruit houses completely swarmed with the pests, and although we have destroyed over forty nests, still they seem as plentiful as before. I found a strong hornets' nest in a hollow tree the other day. The creatures are very savage and soon give the alarm, making a peculiar buzz, and dart about with great force, but a strong fuse will quiet them down, taking precautions as to the outlet."

— CHIPPENHAM COTTAGERS' SHOW.—Having read Mr. Challis's commentary (page 258) on the excellence of the above Exhibition, I for one congratulate Mr. Challis on having the moral courage to recommend the earth system, and a direct application of all household refuse to the fertilisation of the soil. No doubt the general health and wealth of many village communities would be improved in the first instance and increased in the second by an intelligent use of the above means of sanitation. When thoroughly dry earth is used it is the most perfect sanitary arrangement known. This, with the ashes from a fire for weeds, trimmings, and other substances that decay slowly, would be generally sufficient for the fertilisation of most cottage gardens. The poor man's pig seldom has room enough, is generally a nuisance, and the gain from keeping him usually a myth. An intelligent bricklayer told me after having fattened a good pig, and counting the cost, he found his bacon cost him 2s. per lb.—R. MAHER, *Tattendon Court*.

— FRUIT AS FOOD.—As the question of hygiene is now "in the air" it will, we may hope, soon be applied to our food. The present is a very seasonable time to suggest the study, with careful experiments of fresh ripe fruits and nuts as food. These most enjoyable products are being found at least as profitable crops as any that can be grown, as our native fruit of some sorts thrive in every soil; and if juicy and fresh they become often also all-sufficient as a beverage for all kinds of work. There seems, therefore, every reason to hope that a more general use of fruit as food would enable us as a nation gradually to eat ourselves out of our agricultural difficulties, and also very materially to benefit the general health. I shall therefore be glad to forward to all sending an addressed wrapper and two stamps some literature recently issued, "Hints on a Fruit Diet," and also a tract on "Bottling British Fruit," by which fresh fruits can be enjoyed all the year round. As we are now on the eve of a very prolific crop of Blackberries these would prove probably to be the most suitable of all to make experiments with in "canning," as the Americans style it, as well as to lay the foundations possibly of a new industry for rural districts, for our Blackberry crop rarely fails us anywhere.—W. S. MANNING, *Woodlands, Vanburgh Hill, Blackheath, S.E.*

— PREPARING FOR THE WINTER MOTH.—Mr. Joseph Masters contributes the following note to the *Evesham Standard*:—"As the season of the year is approaching when the winter moth will be making its appearance, a few hints by way of reminder to fruit growers may not be out of place. The wingless female moth will soon be making its ascent of the tree to deposit its eggs for the future brood of caterpillars. The best-proved method of intercepting the moth is to band the trees with cartgrease. Buy none unless guaranteed as free from

tar. Numbers of young trees have been killed by injurious compounds sold as grease. Do not use oil in the grease to make it thin. If the daub is stiff it will last the longer. It is important to have it sticky, and look after it and keep it so, otherwise the moth will creep over it. If trees are young and the bark is smooth and tender, some grease-proof paper should be tied next to the bark of the tree, and the daub placed on the paper. If trees are matured and the bark is rough good grease will not injure the tree. Trees where grease-proof paper is used will not require so much grease, as the paper prevents the bark from absorbing it. If all the trees were banded with paper it is probable that the saving of the cost of grease would be an equivalent for the cost of paper banding. Grease may be applied with the hand or a thin flat piece of wood or a small brush; in either case put on a thick layer of the grease. Grease banding should not be delayed after the second week in October, and will require attention until the end of November. The appearance of the moth may be known by taking out a light in the dusk of the evening, when the male moth, if any are present, may be seen. If no male moths are seen you need not trouble to grease-band the trees. Do not be discouraged if, after all your pains, some caterpillars are found; when numerous they are not to be exterminated in one season."

— ORCHARD INSECTS.—As the time has now arrived again for adopting measures to check so far as possible insect enemies on fruit trees, no time should be lost in commencing operations, as the winter moth will shortly appear. The earliest date which I have seen the male flying about is October 8th, a fact which points out the necessity of getting all greasing of the stems completed by the first week in next month. Two years ago we greased all our young trees (dwarfs) without any good results, causing me to have a poor opinion of such a method. Vast numbers were caught in the grease bands, but still sufficient females were conveyed into the trees by males to deposit numberless eggs, so that all this labour and expense was in vain. That grease bands are of little good on dwarf trees I have not much doubt, but in the case of standards the case is different, because the male moth has more difficulty in carrying the female into the trees. I have occasionally caught both sexes together as high as 6 feet, but as a rule they do not fly more than about 3 feet high. I have spent many an hour with a lantern watching their proceedings, which was the means of my being the first to discover how the female moth managed to get over the grease bands to deposit hundreds of eggs on the tree. As above stated, this is not such an easy matter for the moths to accomplish in the case of standards, and that grease bands are of great importance was very conclusively proved at Toddington this last spring. In this instance one tree was accidentally missed, the other trees all round being greased. The result was that the foliage was completely eaten by caterpillars, whilst its neighbours were scarcely touched. I think it a good plan to put two bands on—one near the ground, and another just below where the head begins, as if they escape the one they are very liable to get in the other. It cannot be too strongly urged that no grease be allowed to come in direct contact with the bark of young trees, as serious results will follow from the grease choking up the tissues. A band of strong or grease-proof paper several inches wide should be tied both at top and bottom, and on that the composition spread of just sufficient thickness to prevent it running off on the bark. Put on in this manner no insect will escape alive that gets in it. After storms, and also occasionally dead insects, will render it necessary to regrease, as the bands must be kept sticky till the last moth has disappeared. If once the eggs are laid in the trees it is a difficult matter to save them from injury, as caterpillars will certainly appear. Fruit trees look splendid for another year. Let us hope for better fruit crops and less trouble with insect pests.—S. T. WRIGHT.

THE LATE MISS MARIANNE NORTH.

SOME particulars concerning the travels of the late Miss North were included in a recent brief paragraph recording her death, but the full account, from the *Richmond and Twickenham Times*, is so full of interest, that we have reproduced it here.

There are perhaps few residents in Richmond and Kew of those who have ever set foot inside Kew Gardens who will not experience a more or less keen sense of regret in learning of the decease of Miss Marianne North, the creator and donor of the North picture gallery. This unrivalled collection of oil paintings are, without exception, the work of the deceased lady herself, and are displayed in a building which was erected entirely out of her own expense. They illustrate the flora of every quarter of the globe in astonishing variety, and incidentally not a little of the fauna as well, conveying also in many cases much graphic illustration of geological features and of spots of historic interest. They

combine to an astonishing degree scientific accuracy in the minutest detail with a keen appreciation of beauty and artistic effect. The flowers and leaves seem in many cases to actually stand out from their backgrounds with a vivid reality which almost deceives those most familiar with them. Perhaps a greater marvel even than the character of Miss North's work is the fertility of her brush. The many hundreds of paintings in this gallery were all executed within the space of fifteen years, a large portion of which time was occupied in travel, every exhibit having been completed directly at the scene which it represents.

Miss North was born at Hastings in 1830. Her father was Mr. Frederick North of Rougham in Norfolk, who successfully contested the Parliamentary representation of Hastings in the same year in which his daughter Marianne was born, and in after years Miss North was wont to say that her earliest recollection was that of the reform dinner at Hastings. The family was one of some little note both in politics and literature from the time of the second Charles. Her mother was the eldest daughter of Sir John Majoribanks. She was a child of precocious talent. "Travelling onward," says the writer of the article we have mentioned, "from childhood to girlhood, from girlhood to womanhood, Miss North, like most clever women of the last generation, owed much of her education to herself and little to her teachers." She was "gifted with a rarely beautiful voice and an admirable eye for colour and form, passionately fond of music, of flowers, of books, devoted to the study of natural history, taking an eager interest in all the developments of insect and animal life, in all form of vegetation." In her early years she devoted herself chiefly to the development of her strong musical abilities, but subsequently turned to painting, for which she displayed an even greater aptitude. A keen student of botany and other branches of natural history, she soon turned the exercise of her artistic faculties in this direction. Frequent continental travel with her family gave her much opportunity for these combined pursuits.

The years 1865 to 1867 she spent chiefly in Syria and up the Nile in company with her father, and the fruit of this journey was a series of Nile sketches, which received very high praise from competent judges. Mr. North died in 1869, and from this time onward his daughter appears to have devoted herself with absolute singleness of purpose to the development of art as the hand-maiden of science. In her own words, she made her brush the master of her existence. It was at this time also that she definitely abandoned water-colours as a vehicle for her work in favour of oils. In 1869 and 1870 she travelled and painted in Sicily, but it was not until 1871, during a journey in America and the West Indies, that she commenced to produce the series of paintings which now adorn the walls of the gallery in Kew Gardens. During the West Indian portion of this tour she spent more than two months in solitude in a lonely house amongst the hills. Returning to England she voyaged next year to Brazil, where she lived for several months in a deserted cottage in the heart of the primeval forest. On her way home she visited Teneriffe.

Her next flight was a still longer one, embracing the circuit of the globe through California, Japan, the Indian Archipelago, and Ceylon. The very rich store of artistic work which she brought with her created quite a sensation in learned circles, and her position in the world of science was thenceforth an established one. Especially noteworthy among her discoveries during this journey were the rare Javan Pitcher Plants, her illustrations of which induced Messrs. J. Veitch & Sons of Chelsea to at once send a special messenger across the world on a hunt for specimens. Setting out again in the same year, Miss North visited India. While she was away the collection of some five hundred of her paintings was on view at the South Kensington Exhibition.

It was after her return from India that she conceived the project of presenting her works to the nation. Needless to say her offer of them on this behalf to Sir Joseph Hooker was gladly accepted. Mr. James Fergusson, F.R.S., very kindly gave his services in drawing up designs for the building which was to contain them, and with which most visitors to the gardens are now familiar. The style is light and pretty, as well as suitable to the purpose, and it is considered one of the best lighted buildings of the kind in Europe, daylight being admitted, not from skylights, but from small windows placed close under the roof, after the ancient Greek models. By Darwin's recommendation Miss North next visited Australia, returning thence with a yet more wonderful series of paintings. She then devoted a year to the arrangement of her collection in the new building, which was opened to the public in 1882. A second room was added at the rear in 1883. Between that date and the present, Miss North made several more journeys to different parts of the world, constantly adding to the size and value of her collection, and it was while upon her latest tour, to the interior of South America, that she acquired the seeds of the long and trying illness which has now proved fatal. Here death took place at Wotton-under-Edge, Gloucestershire, on Saturday last, and her remains were interred there on Wednesday afternoon.

Sir J. D. Hooker thus commented on the value of Miss North's paintings in his preface to the catalogue:—"The unique collection of paintings of which the following pages contain an instructive catalogue, is, together with the gallery in which it is placed, a free gift to the Royal Gardens on the part of the accomplished lady-artist and traveller whose name the gallery bears. The pictures were painted by herself, on the spot, in the country indicated; and were arranged by herself in the positions which they occupy; and both the preparation and printing of the catalogue are due to her munificence. On the beauty of the collection it is unnecessary to dwell, and it is not possible to overrate its interest and instructiveness in connection with the contents of the

gardens, plant-houses, and museums of Kew. Visitors may, however, be glad to be reminded that very many of the views here brought together represent vividly and truthfully scenes of astonishing interest and singularity, and objects that are amongst the wonders of the vegetable kingdom; and that these, though now accessible to travellers and familiar to readers of travels, are already disappearing or are doomed shortly to disappear before the axe and the forest fires, the plough and the flock, of the ever advancing settler and colonist. Such scenes can never be renewed by Nature, nor when once effaced can they be pictured to the mind's eye, except by means of such records as this lady has presented to us, and to posterity, which will thus have even more than we have to be grateful for her fortitude as a traveller, her talent and industry as an artist, and her liberality and public spirit."

CLEVELLY, ALLERTON.

CLEVELLY, the residence of T. Sutton Timmis, Esq., is situated some three miles from Liverpool, and is one of the many places around Liverpool in which gardening is seen at its best in all departments. Having a few hours to spare I drove over to Allerton, and was kindly conducted through the houses and grounds by Mr. Cromwell, the head gardener. The houses are all of the most improved style, and have been erected of the best materials regardless of cost. Passing through the commodious potting shed we enter the corridor, from which nearly all the houses are reached. The corridor itself is furnished on one side with fine plants of *Plumbago alba* and *capensis*, *Chorozeas*, *Bougainvilleas*, *Tropæolums*, and other climbing plants, which clothe the walls and hang in festoons from the roof, the other side being devoted to plants in pots, *Coleus*, *Begonias*, *Pelargoniums*, &c., all of which make a capital display, whilst from the roof are suspended some fine baskets of *Achimenes longiflora* major and *alba*. The cool Orchid house has a teak stage on which are four rows of pots, comprising some hundreds of plants, the best varieties of *Odontoglossums* and *Masdevallias*, with *Epidendrum vitellinum majus*, *Sophronitis grandiflora*, and others. The front part of the stage is banked by *Begonias* and *Ferns*, and small ponds between give the house a cool appearance. Along the front of the house suspended from the roof are hundreds of pans of *Odontoglossum Rossi majus* and *Sophronitis grandiflora*, all the picture of health. Although not the best time to see the cool Orchids, still there was promise of a grand show of bloom in its proper season. *Odontoglossum cirrhosum* and *Epidendrum vitellinum majus* were flowering in abundance. A span-roof house comes next in two divisions, the first being occupied with *Muscats* of *Alexandria* at present carrying good serviceable bunches excellent in colour, the second with two fine Peach trees, *Royal George* and *Violette Hâtive*, which cover each side of the house, and which bear enormous crops of fruit each season. At the time of my visit the roots were being examined, and the border was being made heavier by the addition of a little clay to the compost. No. 3 is a vinery in two divisions, the first being filled with the *Black Hamburgh*, the second with *Alicantes* and *Lady Downe's* just finishing and carrying some good bunches fine in the berry. The borders in this house, as in the *Hamburgh* house, were extended last season, the result being good wood and healthy foliage, which should give a good return next season.

The next range entered is a span-roof stove in two divisions, the first having a choice collection of Orchids on the side stages, including capital *Calanthes*, numerous *Cattleyas* in variety and in the best possible health, *Cypripedium Curtisi* in flower, grand pieces of *Lælia anceps*, and splendid *Phalænopsis* on teak cylinders. The centre bed was occupied with fine exhibition plants of *Allamandas Hendersoni*, *Cheloni*, *grandiflora*, and *nobilis*; *Crotons Evansianus*, *Countess*, *Sunset*, *Aureus marmoratus*, *Williamsi*; *Anthurium Schertzerianum*, 4 feet across; *Gloriosa superba*, and a very fine *Nephrolepis davallioides furcans*. Here, as in the first house, were noticed the plants which brought Mr. Cromwell into such prominence at the late Liverpool Show—viz., *Ixoras coccinea superba*, *Dixiana*, *Pilgrimi*, *Westi*; *Rondeletia speciosa* major, splendidly coloured examples of *Crotons* *Queen Victoria* and *Disraeli*, each 8 feet through; a fine specimen of that handsome Fern *Nephrolepis rufescens tripinnatifida*, *Davallia fijiensis*, 5 feet through, and other miscellaneous stove plants, the side stages being filled with Orchids, numbers of *Cattleya Trianæ* bearing sheaths, stout and strong, from which a harvest of bloom may be expected; fine plants of *Cymbidium eburneum*, *Cattleya citrina* on blocks, *Peristeria elata*, a dozen plants of *Cœlogyne cristata*, comprising *Chatsworth*, *Trentham*, and *Lemoniana* varieties, and fully 3½ feet through, and the glorious *Lælia anceps grandiflora*, which has been figured in the gardening journals several times—on a raft 3½ feet by 3 feet, and showing abundance of bloom. In this house I noticed the following Orchids in bloom—*Cattleya aurea*, carrying twelve fine flowers; *Miltonia candida grandiflora*, fourteen spikes; *Odontoglossum grande*, a great number in bloom, with many more in various stages; *Oncidium ampliatum*, &c.

The *Camellia* house contained healthy plants well set with buds. Most certainly the feature of this house are the plants of *Lapageria alba* and *rosea superba*, which cover the whole side of the house, and at present bearing thousands of flowers. Here I noticed some good plants of *Imantophyllum miniatum*, *splendens*, *princeps*, *Milneri*, and *Marie Reimers*. Passing through the entrance proper to the houses (which contains a fine standard *Camellia*), and which is used as a smoke lounge, we come to the *Azalea* house. The plants are healthy and well set with buds, and there are some good plants of *Rhododendron Veitchi*

Passing outside we come to the forcing houses, the first the Tomato house, in which was a good crop of fruit. The Melon house had a good late crop, Mr. Cromwell speaking in the highest terms of Sutton's Scarlet Invincible, and certainly the fruit was very fine, with Sutton's Monarch and Hero of Lockinge. In the Cucumber house the latest had just been planted, and here I noticed some grand plants resting of *Dendrobium thysiflorum*, *fimbriatum oculatum*, *crassinode*,

King, and Marie Louise, and Duchesse d'Angoulême being the best. The pleasure grounds are well kept, and contain some fine specimen Hollies, a choice collection of herbaceous plants, and I was pleased to notice a fine bed of *Lilium lancifolium rubrum*, with hundreds of flowers, in a sheltered position on the lawn, and an oblong bed of *Lilium auratum*. Altogether the place is kept up in first-class style, and certain to be with such a man as Mr. Cromwell at the head of affairs. My

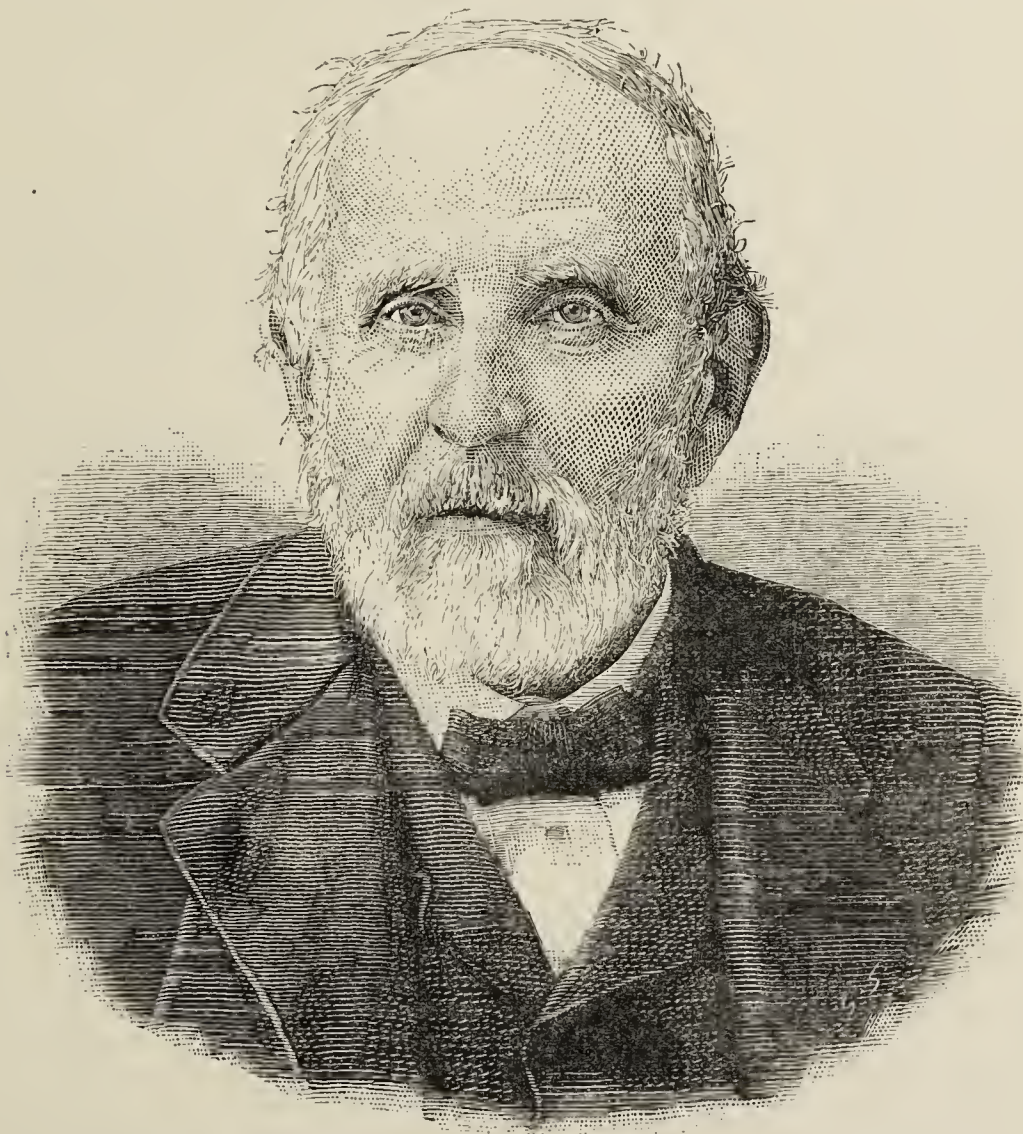


FIG. 32.—Mr. WILLIAM THOMSON (see page 263).

&c. A large roomy Peach case 90 feet long has been reared against a south wall. The trees are specimens of good culture. A few fruits of Barrington large in size and of good colour, and Princess of Wales, very good, were still on the trees, the other varieties grown being Royal George and Grosse Mignonne, and of Nectarines Lord Napier, Pineapple, and Violette Hâtive. The frames are filled with a good selection of Cyclamens, Primulas, Poinsettias, Gardenias, and other plants. About 600 Chrysanthemums are grown, but of these I will speak later, as they will be worth noting. Fruit is very scarce, Lord Suffield and Warner's

visit was a thoroughly enjoyable one, and I left Clevelly with a knowledge that things were going on in the best possible manner.—
R. P. ROBY.

THE AURICULA.

ITS LONGEVITY AND TIMES FOR REPOTTING.

By the life of any one stem, head, lead, growth, or plant the Auricula is a limited perennial. An individual growth will maintain its vigour

and blooming powers for a few years, but plants of some varieties are slower in coming to maturity and longer lived than those of others. In a dozen plants of any one variety no two may live for exactly the same time, or during their life be in corresponding health. It is impossible to define the life term of this plant by the duration of a single plant. It may eventually so break into several heads that which of them is the real original may be a difficult thing to say. It may give off increase, and in favour of strong young plants the parent may have been thrown aside when comparatively worn out; or in its evident old age the plant may have been cut over, and the much reduced and narrowed head induced to go on afresh in restored strength for awhile. Some varieties constitutionally die young, Mr. Ben Simonite and myself having had many examples of young seedling beauties that were short-lived, sometimes even to the dying of the seed plant without issue.

I think it may be said that if in a vigorous collection no young plants were any longer to be kept, a term of half a dozen years would see it in a poor way, and with some varieties quite gone out of it. By way of example I would instance the grey edge Geo. Lightbody as a long-lived plant, and Alex. Meiklejohn as one of short duration. The original plant of Heroine was in good health at seven years old, but whether alive now or not I cannot say. The seed plant of Magpie is yet able to flower at five years of age, but has been beheaded to save its life.

From all this the fact is plain that to maintain a collection of Auriculas in vigour it is imperative to secure a due succession of young plants. If neither young nor old will grow as once they did it is worth while to try for an exchange of young stock with a grower in another part of the country. Further, to maintain the flower itself in the characteristic attributes of its lovely florist forms the raising of fresh varieties from seed is vital to its existence. The span of human life may not suffice to measure the lifetime of an Auricula. We have inherited some old beauties and may raise others that will be grown when we ourselves are gone far hence; yet not only do individual plants but whole varieties as surely if more slowly wear out. In the course of years are vigorous or brilliant examples of these more rarely seen. They do not come in character so constant or so grand as they used to do. They become more difficult to keep up and pass out of cultivation, not through displacement only by superior newer kinds, for these cannot be rapidly accessible, and there are always growers who cherish the favourites of olden times, but because, as with all perishable things, the evening of a long day has come at last. Those who grow the Auricula, thinking the old varieties will live for ever, and those who raise seedlings of much merit and think they never can be beaten, live alike in error. It is as sure as possible that flowers more fixed and rich in qualities of recognised excellence than the former ones can be raised, and that our improvements will be improved upon if only men follow us who will care to give the love and thought and time required.

My friend Mr. Morris thinks the Scottish and English growers are out of harmony on the subject and practice of repotting. I would not put it so. There is not necessarily disagreement in a difference. The whole range of the time mentioned for that operation lies easily within the convenience of the Auricula. There is no more difference between England and Scotland on this point than there is between growers in England itself. Some of us repot our plants early and some late. Some are not particular, but repot them sooner or later, according to opportunity. Some superb plants have been exhibited in our best shows that had not been repotted for two years, while, as instances of a different extreme, some of my own best plants have only been lifted from the open ground six or eight weeks before the flowers expanded. There is room for much difference, without injury to results.

The Auricula can be repotted either early or late. It can be disturbed, shifted, potted, dug up, knocked about at the roots at any time from the end of April till well into September; but unless something is going wrong it is not wise to disturb a plant in the dreary months of November and December. By the middle of January, if such need be, a plant may have change of soil, and in February and March it may be disturbed with none or little apparent check; but of course it is far the best to have Auriculas thoroughly established at the roots by the time the spring growth commences.

I repot my plants as they pass out of flower for reasons that satisfy myself, and which I have sufficiently explained long since and more than once; yet I would not call my friend, Hy. Wilson of Halifax, with his grand plants, a discordant and inharmonious brother because he prefers July for that operation.

Perhaps there is one advantage in repotting early which I may not have previously mentioned. From a plant "beheaded," or cut short over in May, there will spring offsets from the dormant eyes which may be young rooted plants by the time that a grower who repots late is beginning to think about starting with the work. Time saved is life saved.—F. D. HORNER, *Lowfields, Burton-in-Lonsdale.*

TOMATOES FOR PROFIT.

[A paper by Mr. W. Iggulden, Marston Gardens, Frome, read at the meeting of the British Fruit Growers' Association, Brighton, September 11th, 1890.]

It is doubtful if any industry can be said to have progressed more rapidly than Tomato growing for profit. During the past six years or thereabouts, the increase in the number of houses erected specially for the purpose has been something stupendous,

and as far as my experience goes there are few or no signs of any cessation in building. What is even more satisfactory is the fact that it is not a few extra speculative growers that are responsible for this great attempt to meet the demands of an ever increasing Tomato-loving public, but it has been the means of giving hundreds of deserving men in various parts of the country a good opening for gaining a livelihood, and, let us hope, eventually an honourable independence.

The question is often asked, "Will the supply soon exceed the demand, and prices drop below a remunerative price accordingly?" This is a reasonable query, though as it happens it is not growers who put it, but rather men who are contemplating making a beginning. I have never met with one of the former who complained of having more fruit than could be sold at a fairly profitable rate, and it is my firm belief that the time when the supply of home grown Tomatoes will exceed the demand is far distant. I could prove, if time would permit, that not only is the Tomato becoming a necessary article in the diet of many men of business, but that also the industrial classes are becoming equally alive to their good qualities. They supply a need long felt—viz., something to tempt the appetite, and which also is wholesome and fairly nutritious. Particularly popular are Tomatoes among supper-eating folk—a rather numerous body we may reasonably presume—and who shall say how much good they do towards allaying thirst, and thereby prevent an undue use of injurious alcoholic drinks?

SUCCESSFUL TOMATO GROWERS.

It may not be generally known, but it is an indisputable fact nevertheless, that the majority of the most successful growers of Tomatoes for sale are men who began with little or no experience in the matter, or indeed of horticulture generally; nor is the reason far to seek. Private gardeners, many of whom have lately taken to Tomato growing on their own account, and who formerly perhaps marketed the surplus fruit grown by them for previous employers, have been accustomed to quite a different class of houses to what the shrewd market grower thinks proper to erect, and in addition may have imbibed notions very difficult to eradicate. Those who know next to nothing as a rule make various inquiries among those who do, and the wiser of them make a point of visiting some place where the best and cheapest houses are to be seen, and then go to work accordingly. The market grower cannot afford to build houses that are to last a century, but, on the contrary, he ought to have got all he wants out of them in one-quarter of that time. Instead, therefore, of erecting an expensive house or houses he prefers to put up double that number of cheap structures, his returns from the first being doubled accordingly. Nor are "kid glove gentlemen" likely to realise such quick returns as are those who both know how and are not afraid to work. From the Channel Islands the greatest number of Tomatoes are sent to the markets on the mainland, and these are grown by men who do the principal part of their own building, and also much of the subsequent work. Not a few of these hard working, enterprising, and most deserving men previously followed some kind of employment totally different to what they are now doing, one much-respected friend of mine who has got on well in Tomato and Grape culture having for many years been a sailor. Many a private gardener also fancies he knows all about Tomato culture, but an "eye opener" in the shape of such crops as he has never seen before, and which by his methods he cannot obtain, awaits him who is not so well experienced in Tomato culture as he imagines himself to be. Perseverance is a quality needed above all things by the would-be successful grower, and the more practical the man the greater the likelihood of his succeeding, faddists being simply nowhere in the race for supremacy.

PAYING CROPS AND HOUSES FOR THEIR PRODUCTION.

There is really a good demand for Tomatoes all the year round, but naturally the prices vary considerably. With so much foreign fruit in the markets at nearly all times fancy prices will never be had, but home-grown produce being so much superior in every respect it will always sell the most readily. It must not be imagined I am thinking only of the London markets, although these certainly absorb a considerable proportion of the Tomatoes either imported or grown in this country. As a matter of fact there is a good demand for this fruit in every town in the country, and it is all a mistake for anyone to imagine that the vicinity of London is the only neighbourhood where Tomatoes can be grown with a good prospect of the best returns being had. Even the far north, or such an inclement county as Durham, has been found to answer well for Tomato culture, cheapness of fuel and slack competition more than compensating for climatal disadvantages.

As a rule the majority of growers aim to have their crops ripening from May to November inclusive, the start being made as early in the year as possible. In these cases the prices vary

from about 1s. 6d. per lb. in May to 4d. per lb. in August and September, though since the widespread prevalence of disease, and whenever outdoor crops fail, 6d. is the lowest figure reached for the best fruit. What are wanted to produce heavy crops during the months named are fairly roomy, light, airy, and well heated structures, as no dependence whatever can be placed on any houses that do not admit plenty of light and are not well heated. Span-roofed houses will be found the cheapest and best in the long run, and these may be of any dimensions, though experience has taught us that there is greater likelihood of combating disease if the structures are of medium size rather than extra large. A good length would be about 60 feet, and suitable heights and widths are 14 feet and 25 feet respectively. Above all would I advise that the sides be of a good height, or fully 6 feet above the level of door sill, and the less brickwork there is the better. The plants being grown all over the body of the house, and trained up either stakes or strings, it follows they must have good head room, and unless abundance of light is admitted the growth may be soft and unfruitful. All the wood, preferably red deal, required can be bought at wholesale rates, nearly or quite ready for putting together, this including the light rafters—which also must act as sash-bars—and what fittings may be necessary. Very little skill is needed in putting these together, and seeing that glass can also be bought very cheaply and of any size, the glazing is another simple matter. Any attempt to adopt the plan of sliding the glass in grooves, or to butt the squares together in any way, usually proves disappointing in the end, and the plan most generally adopted is rabbeting the rafters, bedding the glass in putty, and finishing off neatly, no top putty being used, but only a good coating of paint. Top putty in time gets loose and admits moisture to the under side, whereas a smooth paint-covered surface holds good for many years. Ample front and top ventilation ought to be provided.

It is my firm belief that winter crops would pay well, the start being made with young plants in August or early in September, and the crops set early in the autumn. A long succession of fruit would ripen during the winter, and an equally good crop could be set and ripened in February, March, and April, or long before the majority of growers have any ready for the market. Well ripened fruit, available during the winter and early spring months, ought to fetch on an average 2s. per lb., and would pay well even if sold rather cheaper. Unfortunately, the large high structures previously alluded to will not answer for these midwinter crops, as the plants fail to set fruit freely unless grown near the glass, or say are trained up the roof about 10 inches from the glass. We have had the roof of a house covered with leading growths about 9 inches apart, furnished with clusters of fruit at every second joint, and that, too, in December. It is the low span-roofed houses, of the style usually erected for Cucumber and Melon culture that answer well for winter crops of Tomatoes, and during the summer these might, with advantage, be devoted to the growth of either Melons or Cucumbers, for both of which there is usually a good demand. With regard to heating Tomato houses, I can only briefly point out that it is possible to purchase really good boilers that require no deep stoke-hole, and but little setting, and that the expansion joints for the hot-water pipes are both the best and the most simply connected by an ordinary labourer.

THE MOST PROFITABLE VARIETIES.

Not a little depends upon the choice of suitable varieties for any particular crop. Some growers swear by the ribbed section, the most popular of which is the Large Red, while others pin their faith on the Perfection type, or those with smooth, rich, red round fruit. The former are much the most free-setting, but are not so attractive in appearance or heavy weighing as the more solid Perfection, Hackwood Park Prolific, Ham Green Favourite and Chemin Red. I would, however, strongly recommend the beginner to rely principally upon a good stock of Large Red, and which he could easily get by purchasing a few fruit at a market stand or of a fruiterer. Most undoubtedly the Large Red is by far the best for the winter crops, and on the whole it is perhaps the most profitable for all seasons of the year. What it lacks in weight and loses in competition with more showy sorts it more than compensates for in bulk, the smooth, round fruited forms very rarely setting so freely even under the most favourable circumstances. The time is not far distant when the Tomato will figure as a dessert fruit. I have met numerous lovers of this "fruit vegetable" who eat them in their raw state with even greater avidity than they would either an Apple or Pear, and if tempting fruit were placed before them in the way of dessert they would be fully appreciated. It should be the market grower's aim to foster this love for Tomatoes, and this can best be done by growing varieties both tempting in appearance and good in quality. Extra large fruit are not to be recommended at any time, and are certainly not the most calculated to tempt anyone to eat Tomatoes much as

they would an Apple. What should be grown are the comparatively small, smooth, round fruited varieties, such as Horsford's Prelude, and the improvement on this, The Conference, either of which present a very tempting appearance in small punnets and are really good to eat. The Peach, another comparatively new variety, is very distinct in every way, and is one of the best that can be grown for selling in punnets. The fruit are produced in long clusters, are somewhat small, ruby red in colour, prettily veined, carry a bloom like the Peach, and are of a pleasing flavour. Nor ought the yellow fruited forms to be lost sight of. These, though attractive in appearance, are unfortunately somewhat wanting in acidity, the principal exception being the Blenheim Orange. If the latter is eaten before it is "dead ripe" the flavour is decidedly distinct and pleasing, and it may yet become a favourite. Golden Sunrise may be briefly described as being a yellow form of Perfection, and it is of very attractive appearance. Those growers especially who get rid of their Tomatoes in their own vicinity ought to make a point of supplying fruit well ripened and of the best quality, and in time they will earn a reputation for the same, and obtain better prices accordingly. Fruit that has to be sent a considerable distance ought not to be very ripe when packed, but at the same time it should be well coloured, or it will fetch no better prices than foreign Tomatoes.

CULTURAL HINTS.

Without going into minute details I shall yet venture to offer a few hints that may prove acceptable to some of my hearers. Where so many have erred is in forming a too rich border for Tomatoes, looseness also being a condition of soil that ought to be avoided. What is wanted is a moderately rich root run, and this ought to be rammed, rolled, or trampled as hard as a road. A loose, rich root run promotes a rank unfruitful growth, firmness having the effect of causing a hard, short-jointed, and fruitful habit, or just what is wanted. If a depth of about 18 inches of fresh loamy soil, if turfy so much the better, can be provided that is all needed for the first season, and this can be renewed by the addition of fresh loam and bonemeal or some kind of special manure for the next year or two. A free use of animal or solid manure ought to be avoided. When a good crop is set, or if the plants present a very starved appearance, liquid manure or a surfacing of some kind of phosphatic manure may be given with advantage occasionally. If these conditions are observed the plants are less likely to suffer from overcrowding. Some growers arrange their plants 2 feet apart each way all over the house, others dispose them nearer 12 inches apart in rows 2 feet apart, in every instance training or confining each to a single stem, and if the border is very firm the latter distances answer very well, the crops in the aggregate being the heaviest. Instances have come under my notice of 8 lbs. of fruit being taken on an average from each plant in a high span-roofed house, but the greater distance mentioned was given, and of course disease was absent.

The cheapest way of training these plants is to place a string to each, fastening this from a peg in the ground to the roof, coiling the stems round them as they advance. The more common practice, as before stated, is to give each a tall stake, none of the plants in either case being topped before the roof is reached. Many succeed in growing strong healthy plants, but fail badly in effecting a good set. Much may be done towards correcting this unfruitful habit by withholding water from the roots for several days together, plants that flag badly in the sunshine owing to dryness at the roots not unfrequently setting much the best crops. A plan adopted by friends at Lewisham in Kent, and at Bath, is well worthy of a trial. This consists merely of going over all the plants in flower towards midday, or as soon as the pollen has been dried either by means of fire heat and air, or sunshine and air, and smartly tapping each bunch of bloom with a Hazel twig. This dislodges the pollengrains in a cloud, sufficient of this becoming attached to the moist pistils to effect a good set. I have seen plants thus treated furnished with large clusters of fruit from the ground up to the roof, there being no failures in the house. I would here add that open air crops are far from being generally satisfactory this season, but those who have a quantity of small green fruit on their plants, and which will not ripen, ought to convert these into a good hot pickle and market it. Such pickles, if well made, would soon become popular, and I venture to opine that the day is not far distant when there will be a good demand for small green Tomatoes.

DRAWBACKS IN TOMATO CULTURE.

There would appear to be no pleasures or profitable occupation without drawbacks of some kind, and unfortunately the Tomato grower has rather more than his share of them to contend with. As far as open-air culture is concerned, this has always partaken somewhat of the character of a lottery, but it is only of comparatively

recent date that bad forms of disease have worked so much havoc among very many plants under glass. To make matters worse, there would appear to be no perfect remedy for the *Cladisporium*, or whatever this new fungoid enemy may be termed, and already it has had the effect of stopping several growers on a rather large scale from running any risks in the matter. That it is to be combated with I have good reasons to assert, but, as I shall show, it is by no ordinary means that it can be stopped, while the consequence of any such extreme preventive measures is an inevitable loss of weight in the crop of fruit grown. Better, however, be satisfied with two-thirds of a full crop than risk losing the lot from disease, especially seeing that it is owing to the depredations of this disease that prices keep up to the figure they now do. In relation to this part of my subject I think I cannot do better than to largely quote from a letter I received from Mr. F. Williams of Devizes, a Tomato grower for profit, who has made such progress in a short time as to be able to cut from 5 tons to 6 tons of fruit in a single season. In this communication, dated July 30th, 1890, he states that last year disease appeared on his plants, "some turning black in the stems and fruit, some had woolly growth upon them, the foliage of others turned off to a very queer blotchy appearance, yellow shiny spots also being noticed on the plants being prepared in the open for winter work, and these after being housed became so badly over-run with disease that all had to be turned out and burnt." These symptoms made it only too evident that the dreaded disease had at last effected a lodgment in his houses. He continues: "My treatment last year consisted in several good syringings of sulphide of potassium as strong as the plants would bear, with a little carbolic softsoap mixed with it to make the sulphide stick on. Plants were, moreover, given more air and much less water than hitherto."

When starting operations for the present season I determined to have a try at what could be done in the way of anticipating the disease. I bought twelve sorts from different firms, but pickled all the seeds for twenty-four hours in a strong solution of sulphate of copper before sowing. The soil in the house was moved out to a depth of 1 foot and fresh brought in. The plants, when ready to put out, had a thorough dipping once or twice in the sulphate of potassium solution. In addition, the hot-water pipes were dressed once every week with linseed oil and sulphur, and the stink thereof was almost diabolical. We used to dress the pipes just after watering. Mr. Williams' aim throughout was to eradicate any germs which might have lodged on the seed, or which might be hanging about the premises, and also to make the atmosphere as disagreeable and unhealthy as possible for the said germs if any put in an appearance later on. In this he appears to have succeeded well, as he only had seven plants die off, and two touched with disease, the germs finding things generally in such a dry sulphurous condition that they have apparently left him in disgust for more promising scenes of action. A dry atmosphere and a good circulation of air, this being maintained more with the aid of fire heat and top air rather than strong currents of cold front air—coupled with a very firm root run, acts, to a certain extent, as a preventive of disease, but is no cure.

The early removal of the principal leaves, which some growers advocate, does more harm than good, its only effect being to weaken the plants. At the same time disease is not long before it overruns all the lower leaves, and unless more are laid in to take their place the fruit will soon cease swelling. We had the disease in our plants badly last season, but kept them in good bearing order throughout the winter in spite of it by simply keeping a dry atmosphere and constantly laying in young shoots in order to have leaves to take the place of those destroyed by disease. We are doing the same thing this season, and our crops are most satisfactory. We have also tried sulphuring the pipes, and if this does not much check the *cladisporium*, it has the effect of exterminating that other troublesome pest, a small white fly known as *Aleyrodes vaporarum*.

ROYAL HORTICULTURAL SOCIETY.

SEPTEMBER 23RD AND 24TH.

THE meeting at Chiswick was opened on Tuesday last, but was not favoured with fine weather, as following heavy showers in the morning a thunderstorm in the afternoon effectually spoiled the day for visitors. The business on the first day was confined to the Fruit and Floral Committees, whose duties were not very heavy; and to the Dahlia Conference, at which there was a good attendance. Grapes and Dahlias constituted the chief attraction, and to these we will briefly refer.

THE GRAPES.

The schedule prepared for the great exhibition of Grapes had been carefully considered, and was as follows:—

Class I.—General collection of Grapes.—Group A.—Sweetwater Grapes, including Chasselas and Muscadines. (1.) Black or purple

berried varieties. (2.) White, green or golden berried varieties. Group B.—Muscat and Frontignan Grapes.—(1.) Black or purple berried varieties. (2.) White, green or yellow berried varieties. (3.) Frontignans. Group C.—Vinous or late keeping Grapes.—(1.) Black or purple berried varieties. (2.) White or golden berried varieties. Class III.—Grapes of very high flavour. Class IV.—American varieties. Class V.—Grapes grown entirely in the open air. Class VI.—Grapes grown under glass without artificial heat. Class VII.—Foreign grown Grapes. Class VIII.—Pot Vines with fruit. Class IX.—Examples of packing Grapes for market to be sent by rail. Class X.—Examples of packing Grapes, 4 to 6 lbs., for private use, to be sent by rail. Class XI.—Examples of the enemies of the Grape Vine—diseases, injuries, insects, &c.

Had a moderate number of entries been obtained in each of the classes a highly interesting display would have been obtained, but unfortunately this was not the case, and the result was disappointing both in the number and quality of the Grapes shown. A really representative exhibition of varieties beyond those usually seen at shows would be extremely useful, and a few of the exhibitors had made an attempt to provide this. The Frontignans were especially well shown in one of the collections, and attracted much notice, while several other little known Grapes were included and examined critically by the authorities present. The Grapes, together with other miscellaneous fruits, were arranged in the large vinery, a most appropriate place, as the Grapes hanging above imparted a pleasing appearance to the house. The exhibits were as follow:—

Messrs. T. Rivers & Son, Sawbridgeworth, exhibited twenty-one bunches of Grapes, comprising specimens of Lady Downe's, Golden Queen, Mrs. Pince, Gros Colman, Alicante, San Antonio, a late black Grape with oval berries; Gros Maroc, Ryton Muscat, Madresfield Court, Muscat of Alexandria, Mrs. Pearson, Early Saumur, Early Silver Frontignan, Tokay Frontignan, Esperione, grown in a cold house; Buckland Sweetwater, Royal Muscadine, and Black Hamburg, the last two from cold houses. (Silver medal.)

From Mr. H. J. Hookings, gardener to S. W. Graystone, Esq., Hurst Side, West Molesey, came seventeen bunches of Grapes, the four specimens of Gros Colman being remarkably alike for size of bunch, berries, and colour. Four bunches of Gros Maroc were also notable for similar characters. Foster's Seedling, Alicante, and Mrs. Pearson were represented by three bunches each (silver medal). Mr. W. Williamson, The Gardens, Tarvit, Cupar, Fife, sent specimens of Grapes affected by Vine moth (*Tortrix angustiorana*) with rust and mildew.

Mr. J. Wallis, Keele Hall Gardens, Newcastle, Staffs, exhibited eighteen bunches of Grapes, representing that number of varieties, their names being as follows:—Black Hamburg, Barbarossa, Gros Maroc, Black Prince, Mrs. Pince, Black Muscat, Madresfield Court, Muscat Champion, Muscat Hamburg, Mrs. Pearson, Muscat of Alexandria, Golden Queen, Lady Downe's, Alnwick Seedling, Gros Colman, Alicante, West's St. Peter's, Trebbiano, and Old Tokay. (Silver medal.)

A most interesting collection of rarely seen Grapes came from Mr. W. Roupell, Harvey Lodge, Roupell Park, comprising twenty-seven varieties, and though most of them were small both in berry and bunch, several exquisitely flavoured varieties were included, notably the Grizzly Frontignan, Diamant Traube, the Strawberry and Raspberry Grapes. The others were Trebbiano, Alicante, Gros Colman, Alnwick Seedling, Lady Downe's, Primavis, Frontignan, Early Golden Frontignan, Black Frontignan, Troveren Frontignan, Dr. Hogg, July Frontignan, Purple Constantia, Canon Hall Muscat, Muscat of Hungary, Muscat Hamburg, Mrs. Pearson, Madresfield Court, General della Marmora, Chasselas Vibert, Royal Muscadine, Black Hamburg, and Duke of Buccleuch, true, but with quite a reddish tinge from being over-ripe. All the Vines are grown in pots in small lean-to houses facing south, the pots being placed on the return pipes. (Silver-gilt medal.)

From the Society's Gardens, Chiswick, twenty-two varieties of Grapes were shown, and they were represented by good well coloured bunches. The varieties were Black Hamburg, Madresfield Court, Black Prince, Gros Maroc (excellent colour), Royal Ascot, West's St. Peter's, Dutch Hamburg, Mrs. Pince's Black Muscat, Muscat Hamburg (superior), Gros Colman, Lady Downe's Seedling, Barbarossa, Alicante, Black Monukka, Alnwick Seedling, Muscat of Alexandria, Royal Muscadine, Raisin de Calabre, Foster's Seedling, Golden Hamburg, and Buckland Sweetwater. These were tastefully staged in neat shallow circular baskets, the white Grapes on pink paper, and the black on white paper. Mr. J. Clark, Albion Nursery, Farnham, showed twenty-eight bunches of Grapes grown under glass without fire heat, "average crop forty-five to fifty bunches on each Vine, and twenty-seven Vines in one house." The varieties were Muscat of Alexandria, Alnwick Seedling, Madresfield Court, Gros Maroc, Gros Colman, and Lady Downe's, the bunches of moderate size, but fairly good colour. (Silver medal.) Messrs. John Peed & Son, Roupell Park Nurseries, Norwood Road, sent nine large bunches of Alicante, Trebbiano, Golden Queen, and White Syrian, the black Grapes being particularly fine.

Several baskets of very fine Grapes were sent from Mr. George Munro, Covent Garden Market, on Wednesday morning, and added greatly to the interest of the Show. They included fine samples from Messrs. Sweet, Kay, and others. Some Grapes were also sent from the Channel Islands.

A silver cup offered by D. Morris, Esq., for the best example of packing Grapes (4 to 6 lbs.) for private use, sent by post or rail, was awarded to Mr. Robert Dawes, Temple Newsam Gardens, Leeds, amongst fourteen competitors. The Grapes (black) were packed closely

in a small square box padded at the sides with moss and covered with tissue paper. No string was used, but the Grapes were quite firm even when the box was turned upside down, and they had suffered very little in their journey.

The Grape Conference was held on Wednesday in the conservatory. The proceedings were opened at 2 P.M. by a few words from Dr. R. Hogg (Chairman). The programme was arranged in this order:—Mr. T. Rivers a paper on varieties of Grapes, Mr. R. D. Blackmore to deal with "The Enemies of the Vine," Mr. W. Thomson with Vine borders, and Mr. W. Coleman with packing Grapes. We hope to refer to some of the chief points discussed in our next issue.

THE DAHLIAS.

The long exhibition tent was devoted to the Dahlias, and a brilliant display was produced, far exceeding the anticipations of most visitors. All the types were represented, and large numbers of varieties were included, far too many to be enumerated here, particularly when it is remarked that some of the exhibitors claimed to be showing over 400 varieties each. Such numbers are overwhelming, but they serve a useful purpose in enabling the Committees to make selections, and some of these will no doubt be published as in the case of former displays of a similar character. Handsome collections were contributed by the following exhibitors, and the medals named were awarded. Silver-gilt medals to Messrs. J. Cheal & Son, Crawley; Paul & Son, Cheshunt; J. Laing & Sons, Forest Hill; Keynes, Williams & Co., Salisbury; and C. Turner, Slough. Silver Banksian medals were adjudged to Messrs. H. Cannell & Sons, Swanley, who had 420 varieties; Dobbie & Co., Rothesay; G. Humphries, Chippenham; Heath & Son, Cheltenham; and Saltmarsh & Son, Chelmsford. Silver Flora medals were accorded to Messrs. Arthur Rawlings, Romford; G. Phippen, Reading; T. S. Ware, Tottenham; and E. J. West of Brentwood. Bronze medals were also awarded to Messrs. J. Peed & Son, and Mr. W. Salmon, West Norwood.

In addition to the Dahlias there were some remarkable groups of Tuberous Begonias from Messrs. J. Laing & Sons, and Messrs. H. Cannell and Sons, which were tastefully arranged with Ferns and other foliage plants, and silver-gilt and silver Banksian medal were adjudged for these exhibits in the order named. A choice and effective collection of hardy flowers from Messrs. Harkness & Son, Bedale, also furnished an attraction of much interest.

The Conference was held on Tuesday in the Conservatory, a portion of which had been screened off for the purpose, and the proceedings commenced at 2.30 P.M., Mr. Harry Turner in the chair. The first subject was "The Origin of the Florists' Dahlia," which was dealt with by Mr. Shirley Hibberd in his customary interesting manner. Mr. T. W. Girdlestone followed with some remarks upon single and decorative Dahlias, and Mr. H. Williams discussed "Show Dahlias." The attendance was good, and the papers were worthy of the attention they received from the audience.

THE COMMITTEES.

Exhibits were comparatively few before the Fruit and Floral Committees; while the Orchid Committee had but one plant to consider, a *Lælia*, for which, however, an award of merit was granted.

FRUIT COMMITTEE.—Present: John Lee, Esq., in the chair; and Messrs. J. Willard, G. Wythes, J. Hudson, W. Bates, G. W. Cummins, P. Crowley, H. J. Veitch, J. Douglas, F. Q. Lane, H. Balderson, J. Cheal, A. Dean, G. Bunyard, and Dr. R. Hogg.

Mr. R. Miller, Ruxley Lodge Gardens, Esher, sent two baskets of handsome Barrington Peaches, gathered from trees on an east aspect (cultural commendation). Messrs. Keynes, Williams & Co., Salisbury, showed a seedling Apple named Chorister Boy, a moderate-sized red streaked Apple. Mr. L. Castle sent a local Essex Apple known as Marie's Pippin, which is to be seen again when ripe. Mr. W. Palmer, Thames Ditton House Gardens, sent fruits of Hero of Lockinge and Sutton's Triumph Melons, the former of excellent flavour. Messrs. J. Carter & Co., Holborn, showed fruits of Cucumber Success, 2 feet long each; also large fruits of Holborn Favourite Melon. Seedling Melons were also sent by Mr. Maher and Mr. Wythes. A fine collection of large Apples came from the Society's Gardens grown under glass. Tomatoes, Capsicums, and Aubergines were also shown from the same garden.

Mr. T. Bradshaw, gardener to the Marquis of Downshire, Hillsborough Castle, Co. Down, Ireland, exhibited samples of a seedling white Grape having large oval berries. It was not in quite its best condition, but was referred to the Conference Committee for further consideration.

FLORAL COMMITTEE.—Present: W. Marshall, Esq., in the chair; and Messrs. J. O'Brien, R. Dean, J. Walker, G. Paul, H. Cannell, W. H. Williams, H. Turner, J. R. Tranter, R. C. Leach, R. B. Lowe, J. T. West, J. Dominy, J. Douglas, J. Cheal, B. Wynne, G. Hill, E. Mawley, and L. Castle.

Messrs. J. Veitch & Sons, Chelsea, showed several rare and interesting plants, *Gynierium argenteum* aureo-variegatum being graceful in habit with narrow golden edged leaves. A box of greenhouse Rhododendrons was also notable (vote of thanks.) Mr. J. R. Tranter, Henley-on-Thames, had a collection of Show and Fancy Dahlias (bronze Banksian medal). Messrs. Reid & Borneman, Sydenham, sent a collection of early Chrysanthemums (bronze medal). Messrs. J. Laing & Sons, Forest Hill, showed two plants of Chrysanthemum Mrs. Alpheus Hardy, with two large blooms. Messrs. H. Cannell and Sons, Swanley, had a group of the neat double white Tuberous Begonia Octavie (vote of thanks); and Messrs. J. Lee & Son, Hammer-

smith, showed small plants in pots of a variegated Cornus, well coloured and most suitable for decorative purposes.

PLANTS CERTIFICATED.

Lælia Eyermanni (Veitch and Manda).—Flowers of a soft blush purple, the wings of lip white, with a faint dash of yellow in the centre.

Dahlia Centennial.—A Cactus variety; rich purplish crimson, edged with maroon.

Dahlia Beauty of Arundel (Mr. Burburry, Castle Gardens, Arundel).—A Cactus variety, of a peculiarly brilliant crimson colour; the tips of the florets purplish.

Dahlia The Mikado (Charles Turner).—A neat Pompon, white tipped crimson.

Dahlia Othello (C. Turner).—A Pompon, of deep rich crimson colour.

Chrysanthemum Lily Stevens (Reid & Borneman).—A neat white Pompon with quilled florets, very free, and likely to be useful for cutting (Award of merit.)

RAPHIOLEPIS OVATA.

A SHRUBBY evergreen plant that is not too well known in gardens is *Raphiolepis ovata*, a flowering shoot of which is represented in the



FIG. 33.—RAPHIOLEPIS OVATA.

woodcut (fig. 33). In some situations the *Raphiolepis* will pass the winter safely out of doors, especially in the south of England, but it is useful everywhere in conservatories or cool houses, its bold vigorous habit and glossy green leaves always having a good appearance. When in flower it is still more attractive; the large heads of white flowers, being produced at the ends of the branches, are very conspicuous.

R. ovata is a native of Japan, and is nearly related to the *Photinias*, some of which are occasionally seen in winter gardens, but which are

rather tender for general culture out of doors except in favoured climates.

THE LIVING EARTH.

(Continued from page 255.)

"MANURIAL value" is a term used by chemists to express the amount of nitrogen that may be present. Now I do not doubt the ability of chemists to make a quantitative estimation of nitrogen, nor their power of informing farmers of the extent to which they may or may not have been cheated when they purchase artificial manures. I would humbly suggest, however, that the real practical manurial value depends not only upon the amount of plant food present, but also upon whether the plant food is present in a form in which it can be digested and exhaustively utilised by the plant. For the latter information, which is of the highest importance, I would sooner apply to a practical farmer or gardener than to a chemist. A chemist, for instance, who had regard to his analyses and nothing else might tell us that nut shells had a certain dietetic value, but ordinary men and monkeys know better than that. He might tell us that gin was richer in certain dietetic ingredients than ginger beer, but we know that ginger beer is the better article of diet. Again, guano has a far higher manurial value than "rich garden mould"—such as is got by mixing earth with organic refuse—but if we do not dilute our guano to the same level, so to say, as our rich garden mould we may kill our plants. To declare that rich garden mould is of low manurial value is absurd, because we know that in it plants of all kinds reach the highest development which is attainable. Farmers and market gardeners will tell you that artificial manures have "got no bottom in them," that their use is, so to say, a speculation; and if climatic conditions are unfavourable when the artificials are applied, the money spent on them is lost for ever. With organic refuse, however, the case is entirely different, and the effect of the application of organic matter, especially of human origin, to the soil is plainly discernible for three or four years. Solid organic matter cannot be washed away. It nitrifies slowly, and doles out the nitrates to the roots of the plants in proportion as they are needed.

From every point of view—scientific, sanitary, moral, economic—I feel strongly that dwellers in the country should take warning by the towns. They should revert to the cleanly and decent habits of our forefathers, and keep the sanitary offices away from the main structure of the house, and not, as is the filthy custom of the present day, bring them almost into the bedrooms. They should keep solid matters out of the house drains, and see that they are decently buried in the living earth every day, and they should replace the drains by gutters and filter all the household slops by applying them to the top of a different piece of cultivated ground every day. Whether an ordinary watering pot, or a tank upon wheels drawn by a horse be necessary for accomplishing this latter object, will depend upon the size of the establishment; but only those who have systematically pursued this plan, as I have done, can know the vigour which is imparted to hedgerows, shrubberies, fruit trees, or forest trees, by a tolerably frequent dose of household slops. There is no difficulty in doing this, provided the will be present—the will, that is, to combine your duty towards your neighbour with an act which is profitable to yourself.

Finally, you dwellers in the country, whether squires, who are the owners of broad acres, or occupants of modest villas with a garden, or, still more, if you be cottagers with an allotment, where it ought to be, round your cottage, what I have to say to you is this:—

1. That sewage, being a nuisance, although a necessity, it is to your interest not unnecessarily to increase its quantity or its offensiveness.

2. Keep solid matters out of the drains, for by doing this you will prevent the putrefaction of the solid, and you will find the purification of a liquid by filtration through the earth is affected with ease, which is proportionate to the thinness of the fluid.

3. Remove all solid matter every day from the immediate neighbourhood of the house, and bury it in the top layer of cultivated ground. Pour the household slops on to the surface of the garden, and do not make the mistake of attempting what is known as subsoil irrigation. If these directions be followed I feel sure that by no possibility can you be troubled by sewer gas, and I also believe that you may drink the water from your surface wells with safety.

I am, as some of you know, no mere theorist—I practise what I preach, and have now some nine years' experience, experience which has served to strengthen my opinions, and enables me unreservedly to exhort others to pursue a similar course with myself. In Hampshire I have a garden, and adjoining it are twenty cottages, which I also own, inhabited by about a hundred persons. These cottages are scavenged every day, and the scavengings are buried in the garden. The caretaker's first duty is to the cottages—to remove filth and bury it, to whitewash, paint, and to keep decent. His second duty is to the garden, where he acts as under gardener. In the garden, which has an extent of about $1\frac{1}{4}$ acre, I am obliged in self-defence (what a hardship!) to raise the biggest crops possible. This garden not only supplies my London house with a variety of fruit, flowers, and vegetables (Cabbage, Potatoes, Carrots, Turnips, Parsnips, Beet, Salsafy, Lettuces, Artichokes of both kinds, Peas, Beans, Asparagus, Seakale, Peaches, Plums, Apples, Pears, Figs, Strawberries, Currants, Raspberries, &c.), which I doubt if I could purchase for £50 a-year of the neighbouring greengrocer; but the over-

plus, which is marketable, just about pays the wages of the caretaker and under gardener. I cannot help thinking that the combination of market gardening with cottage owning in country places opens up the possibility of an industry which is at once profitable and advantageous to all concerned, and affords a good chance of solving a sanitary difficulty.

I am addressing myself to dwellers in the country, but I should like to say to town dwellers that complete sanitation is impossible unless cultivated land be brought into tolerably close relationship with the dwelling. At present our sanitary arrangements are magnificently begun and seldom completed, and while we almost uniformly leave a most dangerous loose end to our sanitary measures we shut our eyes to it, and blow the trumpet of self-satisfaction as if the sanitary millennium had begun. The Allotment Act, as affording an outlet for organic refuse, ought not to be without its effect upon sanitation, and it is to be hoped that the masses will some day wake up to the great importance, from the moral and sanitary standpoint, of providing every dwelling with an adequate outlet. As things go at present I have very little doubt that the agricultural labourer, with his cottage and garden and 12s. a week, is infinitely better off than the town artisan on 25s., who pays dearly for pigging it in overcrowded rooms, in which a cleanly and decent existence is impossible.

I have been reading the last volume of our transactions, and in it I find a very interesting paper by Dr. Sykes, who quotes Dr. Corfield, who, in his turn, is quoting Sir Henry Acland, to the effect that the disappearance of the great cities of antiquity was due to pestilence, rather than war. We must all admit the possibility of such an assumption, and certainly no one can ponder upon the disappearance of Egyptian, Babylonian, Assyrian, Greek, and Roman civilisation without speculating upon the cause, and without applying the lesson to ourselves, and asking ourselves how much longer is our British civilisation to continue? Nationalities seem as mortal as the individuals which compose them. If great nations are destroyed by neglect of sanitary laws, and if prolonged national life is indicative of sound sanitary measures, there is at least one race upon the globe which is worthy of profound study by all who concern themselves with public health. This race is the Chinese, who have seen all the great nations of antiquity in and out, who were probably a great people in the days of Moses and before, and whose thrifty myriads are even now successfully contending with the Anglo-Saxon race in America and Australasia. The Chinese, as is well known, have had to contend with national calamities of a most stupendous kind. In our own days we hear of floods and famines which claim their millions of victims, and yet the race continues to increase in such a way, and to overflow its natural boundaries to such an extent, that it is certain, even without the exact returns of a Registrar-General, that the birth rate must very considerably exceed the death rate, and must have done so in an average way during the 3000 or 4000 years that the Chinese nation had existed. I think there is no doubt that the Chinese will see us out, as they have seen the other great nations of the world out, and the reason, I believe, is obvious. The Chinese are the most thrifty nation in the world. In China nothing is wasted, and all organic refuse is ultimately returned to the soil. Agriculture is in China a sacred duty, and the Chinese have got a firm grasp of the elementary principle that if the fertility of the earth is to be maintained we must constantly replenish it. The nineteenth volume of the Health Exhibition literature contains a most interesting series of papers on China by Surgeon-General Gordon, Mr. Hippisley, and Dr. Dudgeon of Pekin. The papers by Dr. Dudgeon are especially worthy of study, for many years of residence among the Chinese have impressed him with the fact that we have much to learn from them. I have not the pleasure of Dr. Dudgeon's acquaintance, but were he here I am sure he would give a general support to the propositions I have laid before you.

This question is a national one, and concerns us all. Every country squire ought, in these matters, to set a good example to his tenants. If he does not set the example of increasing the fertility of the soil by the daily addition to it of all the organic refuse of his country mansion, he cannot command our sympathy when he goes without his full rent. If a landowner embarks on a great building scheme he ought to keep the sanitation in his own hands. If a well-known landowner has done this—if he had preserved his autonomy on his own estate, and if he had, by a rational use of the railway, transferred the daily scavengings of his valuable city estate to his broad acres in Bedfordshire, perhaps his right of way on his London estate would not have been confiscated, and perhaps he would not have been obliged to remit 25 per cent. of his Bedfordshire rental. As it is, he allowed the vestry to do his sanitation for him, and by so doing lost his autonomy. Who can see how far the process of confiscation which has set in will ultimately reach? This question has an immediate personal interest for all who derive their income from the soil. I feel sure that the clergy would do well to enforce by example as well as by precept the old injunction to "replenish the earth and subdue it." If they do not they must expect to go without their tithes. Improvement in this direction is only to be attained by rousing the public conscience. So soon as the majority of individuals is impressed with the fact that it is wicked to foul our streams and starve the soil, and that our individual responsibility does not end, even though the fouling and starving be done by a "Board," so much the better will it be for the public health and national wealth. Parliament has compelled us to hand over our responsibilities to public authorities, with the consequence that the individual has lost his liberty and independence, and is drifting into a condition of sanitary imbecility.—G. V. POORE, M.D.

PROTECTION FOR THE ORIGINATORS OF NEW PLANTS.

How the originators or introducers of new varieties of plants can be protected in what seems to be clearly their right to some special proprietorship of their productions is a subject that has often been discussed. At the late American Convention of Nurserymen the fact was emphasised that very few persons in this country who had originated valuable varieties of fruit had received any direct benefit from it. As an illustration it was stated that Mr. Worden, who brought out the Grape named after him, and which many people esteem, all things considered, as the best black Grape grown in America, is now a poor man, and never made 500 dollars from this valuable introduction. If inventors are protected by law against the piracy of ideas which have cost them labour and study, it would seem just that a man should be able to reap some reward for having brought out after much thought and experiment a new fruit which may add to the wealth and comfort of millions.

Different plans for patenting plants have been often advocated, but the essential objection to them all was well stated by Professor Bailey more than a year ago as follows:—"It is exceedingly doubtful if a patent could be secured for varieties which spring up from a chance seedling, and most of our varieties come in this way; but if the patent were granted there are innumerable cases in which no jury of experts could agree concerning the distinctness of varieties." Few cautious persons would be willing to swear to the identity of a given Strawberry or Rose, and it would be difficult to prove in any given instance that the flower or fruit in question was not a new one closely resembling an older variety.

Mr. A. L. Bancroft of California has also suggested a horticultural register wherein separate plants like Roses, Chrysanthemums, Ferns, Apples, Grapes could be kept and numbered on a system similar to that adopted in the various herd books where choice live stock is registered, but we then pointed out that a herd book was devised for a purpose quite distinct from those which it is proposed to secure by a system of plant registration. Individual animals are registered so that they may be identified, that their pedigree may be established, and that purity of blood may be maintained in a given breed or strain of live stock. In the case of plants, where the registration of one individual must stand for an entire class, and where the parentage is often unknown and always of secondary importance, it is difficult to see how such a list would prevent a duplication of names for the same plant or the selling of different plants under the same name. Mr. Bancroft's scheme has been carefully elaborated since then, and a plan of registration has been adopted by the California State Horticultural Society. We have no space here to go into the details of the plan, but as it was discussed it seemed to the nurserymen in their convention that it was too cumbersome to be practical and effective.

There is, however, considerable protection already given to the originator of a new fruit in the copyright law. Mr. Hoyt, of New Canaan, Connecticut, stated that he had taken out such a right on his label of the Green Mountain Grape, and had been instructed by eminent legal authority that no man could use this title on a label to a Grape Vine and sell it without his consent. It is true that if anyone should buy a plant of Mr. Hoyt he could propagate it as largely as he chose for his own use, or could sell the Vines under another name, but there would be little temptation to a grower to sell a really valuable variety under a name which would conceal its identity. The name is the very thing the plant-pirate most wants, and he often sells nothing else but the name of a good variety, attaching it to an entirely different plant from the one it really belongs to. This registered trade mark has proved of value too in preventing the sale of spurious plants under the label so registered, so that copyrighting assists in preventing the sale by unauthorised persons both of genuine plants and their counterfeits.

It is hard to see how much greater protection than this can be secured by a horticultural register. The plan of registering new plants has, however, many merits in other directions. It would be of interest to have an accurate description of any new plant filed in some public office, with its portrait and parentage so far as known. We should like to compare a plant and berry of Hovey's Seedling Strawberry as grown to-day with a preserved specimen of the original plant and its berry, or accurate portraits and descriptions of them, to see if any variation from the type had taken place. In questions of identity the register might give some assistance, but the inherent difficulties of accurate varietal description would remain. An organised effort to secure registration would be of value, too, in enlisting the co-operation of all horticulturists to secure to originators their rights, for although no system yet devised can add much to the protection now given by the trade mark laws, this protection would be much more effective if it had an active and united public sentiment behind it.

Of course this protection to the introducers of new plants would make such plants more expensive for a time, just as patented machinery and copyrighted literature is more expensive. But although this increased price might be considered a burden upon horticulture the advantages gained would be positive and important. Chief among these would be the encouragement offered to careful experiments in hybridising. When growers can feel sure that they will reap some reward from discoveries in this field we may entertain a reasonable hope that the breeding of plants may be reduced to something like a system or a science.—(*American Garden and Forest.*)



HARDY FRUIT GARDEN.

APPLES.—These are ripening fast, and most of the earliest culinary varieties may safely be gathered and stored. The Codlin varieties have been much interfered with by blackbirds, and other comparatively soft varieties have suffered similarly—wasps finishing what the birds begun. It is therefore a relief to find the seeds of any variety of Apples, either culinary or dessert, browned, as then the time has arrived for gathering and storing. If this stage of ripening is anticipated—that is to say, if the fruit is gathered before the seed is browned, it will keep badly, shrivelling being the sure consequence. All ought to be very carefully handled, as they bruise easily, and none but the sound fruit should be given the best positions in the fruit room, the rest being either put on one side for present use or converted into cider.

PEARS.—It is the wall trees that are principally furnished with fairly good crops of fruit this season, and as these can be easily covered with nets there is even less excuse for gathering the fruit before it is fit. As a rule such varieties as Williams' Bon Chrétien, Victoria, Beurré d'Amanlis, Doyenné Boussoch, Louise Bonne of Jersey, Gansel's Bergamot, Pitmaston Duchess, Fondante d'Automne, and Comte de Lamy are ripening even earlier than usual, and early storing may in these cases be resorted to. On no account, however, should Doyenné du Comice, Marie Louise, Beurré Clairgeau, Beurré Diel, and other varieties that are generally fit to eat in November or thereabouts be dragged from the tree prematurely, or their quality will be impaired thereby. It would be a still greater blunder to gather Josephine de Malines, Glou Morceau, Winter Nelis, Madame Millet, Ollivier de Serres, and Nec Plus Meuris before they either part from the tree freely when lifted out of their natural positions or the seeds are nearly or quite brown. These late varieties if gathered before they are ready inevitably shrivel badly and are never fit to eat.

STORING APPLES AND PEARS.—It is not often there are extra large quantities of dessert Apples to store, but those who fortunately are somewhat favoured in this respect should take good care of the fruit, as it will be valuable this season. There is no necessity to store them very thinly, but they ought to have a clean sweet position, where no cold currents of air can reach them, and where they can readily be protected from severe frosts. The fruit really keeps longer and plumper when stored in deep boxes and hampers, and this plan of storing is especially to be commended where there is no fruit room proper. The less valuable culinary varieties may be stored in heaps and covered first with straw and then about 6 inches of soil, or much as Potatoes are pitted. Thus treated they keep surprisingly well, but the quality is never so good as when they are kept in a dry cool room or shed. Pears both keep well and ripen beautifully in drawers located in a cool dry room, or they may be stored in shallow boxes in single layers stalk end uppermost. If there is a fruit room well fitted with latticed shelves storing and keeping Pears is a comparatively simple matter, and if each sort is kept separate and duly labelled the owner's visits to the fruit room will in many instances be more pleasurable. A dry heat is objectionable, and the other extreme, cold and damp, must also be guarded against. If the temperature of the room seldom exceeds 55°, and rarely falls below 40°, the fruit will keep well, and if more heat is required to ripen Pears these should be moved to a warm house or kitchen according as they are required, this being the best method of bringing out their true flavour and of prolonging the season of each variety.

RENOVATING FRUIT TREES.—Once more the time has arrived when work of this description may safely be taken in hand. Those trees standing most in need of this renovation, and which well repay for the trouble taken, are fine old wall Pears, Peaches, Nectarines, Apricots, Morello Cherries, and in a lesser degree Plums. When the roots have gone from the surface down into an uncongenial subsoil the health of the tree is greatly impaired, and the quality of the fruit, if any, is also much inferior to what it should be. Undermining the tree, cutting the deep running roots, bringing all those reserved much nearer the surface, and relaying in fresh loamy compost, soon alters the character of the tree for the better, and in most instances answers more satisfactorily than destroying old trees and planting new ones. The work should be done thoroughly, but not in a reckless manner. It is also wiser to extend the operation over two seasons, one half of the roots being done at a time, as to completely lift and prune the roots of a large tree at a single operation might lead to its being so badly crippled as not to recover from the check for several years, if ever. Supposing a large Pear tree is to be operated on, a trench about 2 feet wide, and as much, or rather more, in depth, according to the nature of the ground, should be cut at about 9 feet from the stem, and only half way round. Next gradually fork away the soil from the roots, and to within about 3 feet of the stem, from which distance the tree could be quite undermined without disturbing the ball of soil about the stem. All large deep running roots should be cut or sawn cleanly through, and those more pliable, after having all broken ends cut off and bruised pieces cut away, can then be relaid in nearly, or quite all, fresh soil. A little partially decayed manure or old

Mushroom bed material, and half-inch bones and charred garden rubbish, may well be added to fresh loam, turfy if possible, and a portion of fresh garden soil can also be mixed with the heap if need be. The old roots will probably form some fresh fibres this autumn, and freely next summer, the rest of the roots being lifted and relaid in fresh soil in the autumn.

ROOT-PRUNING YOUNG TREES.—When young and not over-pruned trees are growing rankly and produce few or no fruit, this is a sure sign they want checking at the roots. Even those that are fairly fruitful will frequently be benefited by partial root-pruning, this checking undesirable deep root action, and tends to keep their roots more active near the surface. The method of procedure may be much the same as that advised in the case of older trees, and if the trees are fairly large one side only should be done this season, the other half being left for next autumn. Those that have only been planted two or three years may be worked completely round, these having fewer extra strong deep running roots to cut through. Nor do the latter require any fresh soil, but a little turfy loam will not be wasted on the comparatively large trees. If any flag badly after the root-pruning, syringe frequently, and shade from bright sunshine.

FRUIT FORCING.

FIGS.—Early Forced Trees in Pots.—Examine the roots of these, and as it is not advisable to increase the root room, particularly in the case of large trees, remove a few inches of soil from the base, cutting back the roots, and supply fresh fibrous loam, adding a sixth of old mortar rubbish, and a sprinkling of steamed half-inch bones. Good drainage must be provided, the soil being well rammed in the pots. Remove the loose surface soil and supply the above compost, adding a fourth of well decomposed manure. Afford a good watering, and place the trees where they can have plenty of air with shelter from heavy rains and frost. When it is desirable to increase the size of the trees, or young trees necessitating larger pots, it is necessary to remove the old drainage to cut back the straggling roots, loosening the sides of the ball, shortening the roots a little, removing the surface soil, and after draining the pots efficiently, sprinkle over the crocks a few crushed bones, repot firmly, ramming the soil well. Afford a good watering, and stand the trees in a cool rather dry place safe from frost.

Planted-out Trees.—Keep these drier at the roots, but avoid extreme dryness, and a drier condition of the atmosphere will tend to promote the ripening of the growths. Nothing contributes more to perfecting the growths and a good show of fruit in the coming season than keeping the points of the shoots well up to the light; therefore allow the growths to have their points exposed to light and air, those on roof trellises, which are much the best, being permitted to point towards the glass, the nearer they are to it without touching the better. As soon as the latest trees are cleared of their crops keep the soil drier at their roots and the houses well ventilated in favourable weather, cutting out all useless wood, exposing that left to air and light. Trees that grow too luxuriantly should be lifted directly the leaves begin falling, reducing their rooting area, shortening long roots, especially that are bare of fibres, cutting off those that strike straight down, rectifying the drainage where defective, adding some old mortar rubbish to the soil if deficient in calcareous matter, and making the soil firm, the roots being laid in evenly and well up to the surface. Give a good watering, keeping the atmosphere dry, and freely ventilate the house.

VINES.—Houses Cleared of Grapes.—Vines from which the Grapes have been cleared should now be divested of laterals down to the principal buds, which are to be retained for next year's fruiting, doing so, however, without injury to the old leaves, as upon their preservation depends the maturity of the buds, which should be plump and well ripened. The shoots, however, must not be reduced too much, allowing in each case a few buds or joints beyond the pruning buds to remain as an outlet for any surplus sap, and so prevent undue excitement or premature development of the pruning buds. A free circulation of air is necessary, and in the case of young Vines, or in those that are unduly vigorous, or where there is the least doubt about the thorough maturity of the wood, fire heat will be necessary. When the laterals have been removed, the old mulching or surface dressing should be cleared away, the border pointed over lightly, but not interfering with or damaging the roots, giving a top-dressing of turfy loam, with a sixth of sweetened horse droppings or farmyard manure, and a sprinkling of bonemeal. If the Vines do not make firm wood omit the manure and afford a good handful per square yard of bonemeal along with the turfy loam. If the roots have not penetrated the mulching or last year's surface dressing, remove the soil down to them, and give fresh compost, but do not cover them deeply, 2 or 3 inches depth is quite sufficient. Follow in the case of inside borders with a moderate watering, and allow those outside to have the benefit of October rains, and instead of adding manure to the loam mulch the surface with 2 or 3 inches of fresh horse droppings, covering with dry litter or bracken by the end of October or early November. Now is a good time to add a breadth of 2 feet to the front of borders only partly made, using fresh collected materials, all clean and sweet, also in good working condition, choosing dry weather if possible for work of this kind, mulching with horse droppings, and covering with leaves and a little litter to prevent their blowing about.

Late Grapes.—Evidence of finish in these will not always bear close scrutiny. Make sure that the berries are finished quite up to the stalk before withdrawing the needful aid from fire heat. Alicante invariably finishes well, and Lady Downe's always better than Mrs. Pince, which requires more heat and a longer time to perfect its berries, and it is not as good a keeper as Lady Downe's, the last

being the best of late-keeping Grapes, neither shrivelling nor losing quality or colour like the others. Gros Guillaume well done is quite as noble in appearance as Gros Colman; both have soft or fleshy footstalks, and though the berries colour perfectly they are not good keepers, the footstalks failing to keep the requisite consistence, often failing before the berries. Of the two Gros Guillaume is the better flavoured, but its bunches are too large for everyday use, and Gros Colman allowed to hang some little time parts with much of its disagreeable earthiness. Its noble appearance and usual deep colour and delicate bloom always command admiration. Syrian, Trebbiano, and Calabrian Raisin have enormous bunches, which detract from their usefulness, militating against good finish, and however well grown they are, with all white or yellow-skinned Grapes, more susceptible of damage from damp than black Grapes. Like all thick-skinned Grapes, they require a long time to mature after they are apparently ripe, consequently a temperature of 55° should be assured, with a rise of 5° to 10° by day, and a circulation of air until the foliage is giving indications of falling, when a temperature of 50° will be sufficient. The inside borders must not be allowed to become too dry. Water if necessary early on a fine day, and cover with a dry mulch as a safeguard against damp and to avoid a repetition of the watering. Outside borders will not require watering, as they usually at this season are damp enough; but it is essential to the sound and plump keeping of the Grapes that the soil be moist, lack of moisture at the roots being a chief cause of shrivelling when it does not arise from imperfect finish. If in a proper state of moisture they should be covered, preferably with lights, or some other means must be employed to throw off the wet, as saturation repeatedly from heavy rains is destructive of the roots, besides reducing the temperature of the soil needlessly.

Late Muscats.—If these are not now perfectly finished continue rather sharp firing in the daytime, with a free circulation of air and enough at night to prevent the deposition of moisture upon the berries. There is danger of the Grapes shrinking if there be a deficiency of moisture at the roots, and when water has to be given to inside borders where the Grapes are in an advanced stage of ripening, there is danger of spot, though it may be prevented by a free circulation of air, and covering the border with dry material. Indeed, moisture must be kept down by a buoyant atmosphere, pent-up air with a sudden increase of warmth from sun being sure to induce moisture to condense on the berries; which will cause spot, and then the Grapes will speedily decay. The inside borders should be covered with clean dry straw or matting to prevent moisture arising. When the Grapes are thoroughly matured a gradual reduction of temperature must take place, about 50° at night being necessary for Muscats after they are matured.

Late Black Hamburgs.—These finish and colour at a late period better than the thick-skinned varieties. Those that are now colouring and advanced in ripening should have a temperature of 60° to 65° at night, and 70° to 75° in the daytime, with a circulation of air constantly, not allowing the border to become dry, but giving a good watering if they are only partially advanced in ripening, and mulch with rather short dry material. Hamburgs like a good spread of foliage, therefore only restrict the laterals to prevent overcrowding; but after the Grapes are finished further extension must be avoided, yet not reducing the foliage much, as this assists Hamburgs to keep their colour. When ripe a temperature of 45° to 50° must be maintained, and air freely admitted by day whenever the weather is favourable, never allowing the temperature to rise considerably before air is admitted, as moisture will then be condensed by the cooler surface of the berries and their tissue be destroyed, the epidermis parting from the flesh.

Houses of Ripe Grapes.—Black Hamburgs and all the thin-skinned black Grapes lose colour by hanging. Nothing preserves them better than a good spread of their own foliage, and where this is scanty or only moderate some herring net doubled over the roof lights will materially assist in the Grapes keeping colour. A moderate amount of air moisture is beneficial to the foliage and not inimical to the Grapes, only the air is not stagnant, and air is given early enough to prevent the sun heating the atmosphere, and causing moisture to be deposited on the berries. In too dry an atmosphere the Grapes are liable to shrivel, especially when the Vines are dry at the roots, it not being uncommon to see Vines with their roots entirely inside ripening their foliage and the Grapes shrivelling, whilst Vines in outside borders have fresh foliage and plump Grapes. That in the same house. The Grapes should be looked over frequently for the removal of decayed berries, damp being their greatest enemy.

Young Vines.—Those planted last spring or early summer will need every encouragement in keeping the foliage clean and healthy; also keep the laterals away from the principal leaves in order to their free exposure to light and air, especially those at the base of the canes, so that the buds to which the Vines are to be pruned may be thoroughly ripened, and the wood at that part thoroughly firm and stored with food. A genial warmth in the pipes by day will assist the wood to mature, and ripening will be induced by throwing open the ventilators at night. Although a somewhat dry condition at the roots is desirable it must not be persisted in to the extent of causing the soil to crack.

PLANT HOUSES.

Allamandas.—The growth of plants that have been used in the conservatory has nearly ceased. If these are removed at once where the night temperature ranges to 60° they will soon start into growth again, and continue to yield flowers until Christmas. Fully expose them to the sun and supply stimulants liberally if the pots are full of roots. Plants that flowered early may be induced to rest by placing them in a

temperature of 55°, where water can be gradually withheld. Do not ripen them prematurely, or the wood will eventually shrivel instead of remaining firm and plump. Two months' rest is ample for these plants, and if rested now they may be pruned and started again early in December.

Clerodendron fallax.—Select two or three of the earliest plants and allow them to flower where the atmosphere is moderately dry and a circulation of air can be provided daily, seed will then be produced freely. When well grown this *Clerodendron* is very ornamental in the stove or intermediate structures during the next two months. Insert plenty of cuttings of *C. fragrans*, they will be useful for flowering in small pots early in the year. The cuttings should be inserted singly in thumb pots, and when well rooted place them into 3-inch pots. They flower freely when confined at their roots. If given liberal root room they grow too luxuriantly and fail to flower satisfactorily.

Ixoras.—Select a number of growing shoots that are moderately soft, and insert them in sandy soil in 2-inch pots. These will be useful for decorative purposes in spring, and carry one fine truss each. Young plants that are well rooted and growing freely may be placed into 4-inch pots. Press the soil firmly, and grow the plants on a shelf close to the glass in a warm moist atmosphere. They will make greater progress if gentle bottom heat can be provided for a time. Fully expose them to the sun. Large plants that have become woody through being confined at their roots are flowering freely the second time, and others will not be long before they yield a supply of trusses for cutting. Young plants growing into specimens should have the points of any shoots removed that are taking the lead. Keep the plants free from mealy bug by examining them frequently, and syringe at once with a solution of tobacco water, or fumigate the plants with tobacco smoke if thrips become established upon them.

Aralias.—Plants of *A. Veitchi*, *A. Veitchi gracillima*, *A. leptophylla* and others that are large enough for table decoration may be placed in a temperature of 50° to 55°. They will remain in good condition, and growth will be very slow. In brisk heat they run up quickly, and soon become useless. Plants that have been raised from portions of stem and are growing freely may be placed into 4-inch pots, and grown in brisk heat. These do well in loam, sand, and one-seventh of manure. Where there is a plentiful supply of fine peat a little may be mixed with the loam.

Crotons.—Plants that are highly coloured and large enough for table and other forms of decoration should be prevented making further growth. Fully expose them to the sun, and place them where the night temperature can be kept at 55°. Admit air daily, and gradually increase it. This prepares the plants for room decoration better than when removed from a warm moist atmosphere. Plants that are fully exposed to the sun, highly coloured, and their pots full of roots are liable to be attacked by red spider. Be careful the soil does not become dry at the roots of the plants, and syringe them liberally. The plants are greatly benefited by being syringed once or twice weekly with soot water perfectly clear. Assist plants in a backward condition by keeping the house warm and close, closing the ventilators early, so as to run up the temperature considerably in the afternoon. Insert in small pots all highly coloured side shoots that have been produced by plants from which the tops were removed some time ago.

Paneratiums.—The earliest of these are growing freely, and as they cease flowering must be kept close, moist, and shaded from the sun, with abundance of water and occasional stimulants. Any plants that need larger pots may be attended to at once in a compost of loam, sand, and one-seventh of decayed manure, a little charcoal may be added. It is not advisable to break up the plants in their present stage of growth. The check would be too serious, and prevent the plants making good growth afterwards. Plants that need division should be left as they are until February, or just preceding growth.

Vincas.—Pinch the shoots of plants in 5-inch pots for the last time; they will be useful in the stove during the dreary months of winter. The shoots are also useful for cutting; in warm rooms they will continue to develop their flowers for a long time after they have been severed from the plant. Cuttings may be inserted in small pots for early spring flowering. Large plants that have ceased flowering may be placed in a moderately dry atmosphere where the temperature ranges about 55°, and gradually withhold water.

Dracæna gracilis.—This is probably the most useful of all *Dracænas* for room decoration. It will stand in almost any position for a long time. Large plants may be removed to the greenhouse. In this position avoid cold draughts striking upon the plants. Those that have grown too large may have their heads removed and rooted in 4-inch pots. Those raised from heads are very useful for single vases, while those from the stem are the most serviceable for table decoration. They are lighter through the foliage being only about half the width of those that have grown strongly.

THE BEE-KEEPER.

APIARIAN NOTES.

THE WEATHER.

WE have now reached the time when honey gathering in normal seasons ceased, but this puzzling season is an exception, and bees

are still working and hives are increasing in weight, the weather continuing fine. The 12th inst. was the best day they had, although the following days were rather windy, which is against bees flying and the secretion of honey. On the evening of the 18th September the lightning gleamed across the hill tops, which often indicates storms, but the morning following was one of the finest we have had, and we expect the bees to still add to their stores, as there is plenty of Heather in fine bloom. Taking everything into consideration we have been agreeably disappointed, and feel sure it will not be only interesting but instructive to give a brief summary of our management.

HOW WE PREPARED OUR BEES FOR THE MOORS.

As is well known I never allow my stocks to be low in stores nor to indulge in fanciful and unnatural feeding in driblets. Unlike many seasons we have experienced when we had to feed the whole summer, the middle of July found our bees with a fair quantity of honey, and so crowded that had the weather settled many supers would have been filled. At this season, even with large stores, bees are liable to draw their brood, and if not prevented all hopes of a yield of Heather honey are gone. To prevent brood drawing and to encourage breeding, I fed most stocks with 5 lbs. of sugar, the exceptions being the Cyprian blood, done for the purpose of keeping up their reputation as good honey gatherers without feeding; these, however, were the only stocks that drew brood, and which driblet or stimulative feeding would not have prevented. The preparation and management in this respect are in no way different from spring management.

Our hives require only a few minutes to prepare for the journey of fifty miles and eighteen hours' imprisonment, an ordeal no bees could stand in the state ours were in the ordinary hives of the day; but in our safety hives not a bee was lost, although the day on which we took them was the hottest of the season. The Thyme was profuse and fragrant, and in one hour after the bees were released they had taken to their supers, and as the body of the hives was filled with brood would have been filled and completed in a few days. The fine weather lasted, however, but one day longer, with the results already explained. For a month the rivers and rivulets were in flood, and although we had three or four more dry days during the month than in 1889, the rain and cold were excessive, and entirely at variance with the meteorological reports some twenty miles distant.

DRONE EXPULSION.

During this period drones were expelled, which is a great advantage not to be going on during honey gathering. Young bees hatched, but none was drawn unless in the hives mentioned, and those belonging to other people who had neglected to feed them. By the time the weather improved supers were abandoned, and although some colonies take to them on account of so many empty combs in the body of the hive the greater part of the honey gathered has been stored there.

HOW SUPERS MIGHT HAVE BEEN SECURED.

Had the weather settled sooner, or had I had any idea that it would have continued as it has, I would have removed the under body box for several days. This would have compelled the bees to cluster in the supers, and comb building would have begun. By this plan a more saleable article would have been secured, but a less quantity, which from a commercial point of view in so scarce a year would have been the least profitable.

ATTENDANCE TO HIVES.

To secure the greatest results at the moors it is absolutely necessary to be in almost close attendance with the bees, as in spite of all precautions (unless having young queens) and bad seasons bees will swarm. During cold weather entrances require to be contracted to prevent extra consumption of food and robbing, then as the honey is getting less plentiful robbing is greater, and a narrow doorway is the only safeguard, while it keeps up the heat inside as

it declines with the season, and enables the bees to carry up and seal all honey.

WEIGHT OF HIVES.

Our bees will have to be at home before I can give the quantity of honey gathered, and the result of the six varieties of bees. I cannot yet say which have gathered most, but I am glad to say that I can with one exception corroborate all "A Hallamshire Bee-keeper" has said of the Punic bees. I am sure it will please him to learn that those he sent me are not in the rear, and it will neither surprise him nor me should they prove to be the heaviest hives on the moors. They have one feature that "A. H. B. K." has never explained, and it is a good one—viz., they have shorter abdomens than some of the imported races, which brings their load and centre of gravity well forward under their wings, and power of flight is increased, and they can brave storms that longer bees cannot.

I trust the foregoing explanations will assist bee-keepers in the future, and enable all who carry out the system to their satisfaction and advantage securing a large yield of honey in the midst of many hives that, according to what their owners explained lately, have not gathered as much as will keep the bees alive during the winter, and I have examined many that have gathered much less. Fuller particulars will be had when at home from—A LANARKSHIRE BEE-KEEPER.



✱ All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Netting (E. H. B.).—Your complaint appears to be well founded, for if your measurements are correct you have less than 33 square yards.

Pentstemon W. E. Gladstone (J. F.).—The spikes sent were very fine, and the variety is evidently a handsome one, but the flowers had all shaken off the stems when they reached us, and had consequently nearly all withered.

Seedling Richardia (H. E.).—Both the leaves and spathe were withered on arrival, but such a plant as you describe bearing miniature spathes abundantly would be an acquisition, and a good flowering example sent to the Floral Committee of the Royal Horticultural Society would receive attention. The present is not the best season for displaying the character of the plant. The spathes of Richardias usually increase in size with the strength of the plants and high culture. The specimens you send are certainly very small, and the name "Little Gem" seems appropriate.

Protection for Fruit Blossoms (W.).—There is no objection to any of the materials you mention for protecting blossoms from frost, but netting is not nearly so good as canvas, for the blossoms are injured by damp or rendered more susceptible to damage than when kept dry. The stouter thicknesses of scrim canvas and tiffany are good, but we prefer Hessian or scrim canvass, both of which are 1½ yard wide and can be had of varied stoutness, which influences the prices. With care the materials are durable, not being so much affected by wet as cotton fabrics. They are made of hemp, and have a certain openness favouring a circulation of air; we find them excellent protection. Wool fabrics are, of course, the best, but they are double the price or more.

Destroying Thistles on a Lawn (J. M.).—The ground we presume is efficiently drained. If not it should be done to a depth of 3 to 4 feet, as Thistles are deep rooters, and are much checked by draining. After this they yield more readily to pulling or cutting, either of which will destroy them, especially if a little salt or nitrate of soda be dropped into

the holes, or in cutting them off a little sulphuric acid placed on the cut part will act more effectively, and usually is efficacious at the first dressing, but should be persisted in as necessary. The sulphuric acid is best applied with a stick notched at one end, and the liquid placed in an old blacking bottle with a piece of stout wire twisted round the neck, so as to form a longish handle. The acid must be used very carefully, only allowing it to touch what is to be destroyed, keeping it from the hands and clothes.

Select Peaches and Nectarines for Early and Late Houses (L. J. A.).—For early Peach house:—Peaches: 1, Waterloo or Alexander; 2, Hale's Early; 3, Condor; 4, Royal George; and of Nectarines, 5, Lord Napier; and 6, Elruge. Late house:—Peaches: 1, Grosse Mignonne, but Belle Beauce is finer though ten days later; 2, Alexandra Noblesse; 3, Barrington; 4, Princess of Wales; 5, Walburton Admirable; 6, Sea Eagle; and Nectarines, 7, Improved Downton; 8, Rivers' Orange; 9, Pinc Apple; and 10, Victoria. A Cherry tree is not suitable for growing in the same house as Peaches, for when the Cherries are ripening the fruit must be kept dry, and unless you can insure that we do not advise the practice. If you decide to have a Cherry you could not have a better than Early Rivers.

Transplanting Fruit Trees (G. J. A.).—In lifting and transplanting the Pear trees no difference need be made in the pruning. As they, however, are to remain on the spot, the trees may be lifted carefully, not allowing them to suffer through being out of the ground long. The chief cause of red spider is want of nourishment, but it no doubt spreads rapidly, and can only be kept under by forcible syringings and the application of an insecticide. The trees should be dressed this autumn directly the leaves fall with a solution of softsoap, 4 ozs. to the gallon of water, applying with a brush, washing them thoroughly in every part. Give a good mulch of manure over the roots, and keep them well supplied with water and liquid manure during dry weather in the growing season. Gather the beans when quite dry, and place them in stone jars in layers with salt alternating, enough salt being used to cover them.

Pruning Old Lilacs (An Ignoramus).—The old Lilacs will be the better for having the suckers thinned, but leaving some of the best in strength and place, cutting back any of the old that are long and bare; but unless overgrown the old stems should not be interfered with, as Lilacs flower more freely on the older branches. Privets may be cut-in to any extent, but if you want them to flower they must not be cut hard back, merely shortening irregularities. Golden Elders will bear cutting to any extent, but they, where space permits, are best only kept from straggling, shortening irregularities of growth during the winter season. Pruning is best performed in autumn, directly the leaves begin falling; or they may be cut back now, so that the growths left will have the benefit of the autumn sun. It may, however, be done any time during the winter, preferably in mild weather, always before the buds begin swelling.

Peaches on Walls versus under Glass (A. N.).—In the majority of cases Peach growing is very uncertain against walls, and it is to do away with the uncertainty that glass is recommended by most growers for sale. Trees, however, well protected and managed are grown profitably in many localities against walls, but that is beside the question, as it is not a matter of successful culture against walls, but whether erecting a wall or a glass structure for the cultivation of Peaches and Nectarines for sale would be the most economical and profitable. First cost and after cost, or wear and tear, as well as cost of production, have to be considered, and where they have been the glass structure has afforded the most certain and highest dividends on the outlay. Indeed, some walls occupied with Peaches and Nectarines, though paying what was considered a fair per-centage of profit on the labour and means expended upon them, afforded very much better results when covered with glass, the house being erected over the whole border, and trees grown in front as well as on the wall. Where a wall exists, and Peaches and Nectarines can be grown satisfactorily, to cover it with glass without affording accommodation for more trees cannot be expected to pay, but where the climate is cold to cover the wall with a case insures certain and finer crops of fruit. Growing fruit for home consumption and for sale are very different, requiring consideration from their respective standpoints. From a sale point of view Mr. Rivers is no doubt right.

Walnut Trees Coming into Bearing (S. B.).—There is a great difference in the soil and locality in respect of the age at which the trees come into bearing. Trees on silicious soils and calcareous soils produce fruit sooner than trees on rich and moist soils. The mode of raising also affects the age at which the trees bear; those grafted come into bearing in about half the time that those raised from seed require. Trees of the common Walnut 6 to 10 feet high, and grown thinly as well as frequently transplanted, will usually bear in three to five years after being placed in their permanent quarters. The earliest-bearing is Dwarf Prolific, which bears abundantly at 6 feet high, affording good-sized well-flavoured nuts, and is a variety that reproduces itself from seed. It, however, requires a warm soil and situation. Ordinary varieties of the common Walnut which are usually raised from seed do not afford profitable crops until of the age you name—viz., thirty or forty years. The only thing likely to cause trees of that age to bear is to root-prune them, which should be done as soon as the foliage turns yellow or is beginning to fall. In order to secure more fertile trees, scions should be taken from trees that are noted for fertility and good quality, grafting the stocks from seed so as to secure earlier bearing and a certain character. For elevated and northerly localities the Yorkshire is very desirable.

Plants for Conservatory (A. N.).—As climbers you could not have anything better than drooping plants, which always have a graceful appearance; but your roof being low they would occasion much cutting, therefore plants that are neat in growth would perhaps suit your purpose better. Of compact growers *Lapageria rosea* and its variety *alba* are superb. The roof covered with these would be extremely chaste, and for a small house nothing could be better than something distinct. *Rhynchospermum jasminoides* and its variety *variegata* are also good and sweet. Those are what we recommend of the neat growers. For depending, *Acacia Riceana*, *Passiflora Impératrice Eugénie*, *Solanum jasminoides floribundum*, *Tacsonia insignis*. Foliage plants suitable for your purpose are—*Dracaenas australis*, *congesta*, *rubra*; *Eurya latifolia variegata*, *Ficus elastica*, *F. elastica variegata*, *Farfugium grande*, *Grevillea elegans*, *G. robusta*, *Lomatia elegantissima*, *Phormium tenax variegatum*, *P. Colensoi*, *Rhopala elegantissima*, *Yucca aloifolia* and *Y. quadricolor*, *Isolepis gracilis*, *Coprosma Baueriana variegata*, *Aralia leptophylla*, *A. Sieboldi* and its variegated form, *Aspidistra lurida variegata*, and *Veronica Andersoni variegata*. A few Palms also would be useful, such as *Phoenix reclinata*, *P. sylvestris*, *P. tenuis*, *Corypha australis*, *Areca rubra*, *Chamærops excelsa*, and *Rhapis flabelliformis*. Also Ferns, such as *Nephrolepis Duffi*, *Adiantum cuneatum*, *A. Williamsi*, *Asplenium dimorphum*, *Cyrtomium falcatum*, *Davallia Mariesi*, *D. tenuifolia stricta*, *Lastrea aristata variegata*, *Lomaria gibba*, *Nephrodium molle corymbiferum*, *Pteris cretica albo-lineata*, *P. serrulata* and *var. cristata major*, and *Selaginellas formosa* and *Wildenovi*. For the pillars you could not have anything better than *Abutilons* and *Heliotropes*.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*J. G.*)—1, Cockle's Pippin; 2, Calville Blanche; 3, Alfriston; 4, Kentish Fillbasket; 5, Sturmer Pippin; 6, not known. (*J. H.*)—1, Vicar of Winkfield; 2, Doyenné Boussoch; 3, not known; 4, Duchesse d'Angoulême; 5, not known; 6, Napoleon.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens should be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*W. R.*)—1, *Helianthus multiflorus*; 2, *Senecio pulcher*; 3, *Aster amellus*; 4, *Rudbeckia purpurea*. (*H. T.*)—1, *Polygonum cuspidatum*; 2, *Nycteria selaginoides*; 3, *Kniphofia Uvaria*; 4, *Lagurus ovatus*; 5, *Herniaria glabra*.

COVENT GARDEN MARKET.—SEPTEMBER 24TH.

MARKET quiet, with no alteration.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, $\frac{1}{2}$ sieve	3	6	to	6	0	Lemons, case	10	0	to 15 0
„ Nova Scotia and						Melons, each	1	0	2 0
„ Canada, per barrel	0	0	0	0		Oranges, per 100 ..	4	0	9 0
„ Tasmanian, p. case	0	0	0	0		Peaches, dozen	1	0	8 0
Grapes, per lb.	0	9	3	0		Plums, $\frac{1}{2}$ sieve	4	0	9 0
Kentish Filberts, 100 lbs.	50	0	52	6		St. Michael Pines, each..	2	0	6 0
„ Cobs	55	0	57			Strawberries, per lb. ..	0	0	0 0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes, dozen	0	0	to	0	0	Mushrooms, punnet ..	1	6	to 2 0
Asparagus, bundle	0	0	0	0		Mustard & Cress, punnet	0	2	0 0
Beans, Kidney, per lb. ..	0	3	0	0		Onions, bushel	3	0	4 0
Beet, Red, dozen	1	0	0	0		Parsley, dozen bunches	2	0	3 0
Brussels Sprouts, $\frac{1}{2}$ sieve	0	0	0	0		Parsnips, dozen	1	0	0 0
Cabbage, dozen	1	6	0	0		Potatoes, per cwt. ..	3	0	4 0
Carrots, bunch	0	4	0	0		„ New, per lb.	0	0	0 0
Cauliflowers, dozen	2	0	4	0		Rhubarb, bundle	0	2	0 0
Celery, bundle	1	0	1	3		Salsafy, bundle	1	0	1 6
Coleworts, doz. bunches	2	0	4	0		Scorzonera, bundle ..	1	6	0 0
Cucumbers, doz.	2	0	3	6		Seakale, per bkt. ..	0	0	0 0
Endive, dozen	1	0	0	0		Shallots, per lb.	0	3	0 0
Herbs, bunch	0	2	0	0		Spinach, bushel	1	0	2 0
Leeks, bunch	0	2	0	0		Tomatoes, per lb. ..	0	3	0 6
Lettuce, dozen	0	9	1	3		Turnips, bunch	0	0	0 4

CUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	2	0	to	4	0	Lilium, various, 12 blms.	1	0	to 2 0
Asters, per bunch, French	0	9	1	0		„ longiflorum, 12 blms.	2	0	4 0
„ English, 12 bnchs.	3	0	6	0		Marguerites, 12 bunches	2	0	6 0
Bouvardias, bunch	0	6	1	0		Maidenhair Fern, dozen			
Carnations, 12 bunches ..	4	0	6	0		„ bunches	4	0	9 0
„ 12 blooms	1	0	2	0		Mignonette, 12 bunches..	1	0	3 0
Calceolaria, doz. bunches	3	0	6	0		Pansies, dozen bunches ..	1	0	2 0
Chrysanthemum, 12 blms.	1	0	3	0		Pelargoniums, 12 trusses	0	9	1 0
„ 12 bunches	4	0	12	0		„ scarlet, 12 bnchs	3	0	6 0
Cornflower, doz. bunches	1	6	3	0		Pinks (various), doz. bnchs.	3	0	6 0
Dahlias, dozen bnchs. ..	2	0	4	0		Primula (double) 12 sprays	0	6	1 0
Eschscholtzia, 12 bunches	0	0	0	0		Roses (indoor), dozen ..	0	6	1 6
Eucharis, dozen	2	0	4	0		„ Moss (Eng.), 12 bch.	0	0	0 0
Forget-me-not, doz. bch.	1	6	4	0		„ Red (Eng.) 12 bch.	2	0	6 0
Gardenias, 12 blooms ..	2	0	4	0		„ Red, 12 blooms ..	1	0	2 0
Gladioli, 12 bunches ..	4	0	9	0		„ Tea, white, dozen ..	0	6	2 0
Gypsophila, per bunch ..	0	6	1	0		„ Yellow	2	0	4 0
Iris, various, dozen bnchs.	0	0	0	0		Stocks, dozen bunches ..	3	0	6 0
Lapageria, 12 blooms ..	2	0	4	0		Sweet Peas, 12 bunches	1	6	3 0
Lavender, dozen bunches	3	0	5	0		Tuberose, 12 blooms ..	0	3	0 9

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Aralia Sieboldi, dozen ..	6	0	to	12	0	Geraniums Scarlet, p. doz.	2	0	to 6 0
Arbor Vitæ (golden) doz.	6	0	8	0		Heliotrope, per doz. ..	4	0	6 0
Asters, dozen pots	3	0	6	0		Hydrangea, doz. pots ..	9	0	18 0
Calceolaria, per doz. ..	4	0	6	0		Lilium lancifolium, doz.	9	0	18 0
Chrysanthemum, per doz.	6	0	24	0		„ longiflorum, doz.	12	0	24 0
Climbing Plants, various,						Lily of the Valley, 12 pots	0	0	0 0
dozen pots	4	0	9	0		Lobelia, per doz.	0	0	0 0
Dracaena terminalis, doz.	24	0	42	0		Marguerite Daisy, dozen	6	0	12 0
„ viridis, dozen	12	0	24	0		Mignonette, per dozen ..	4	0	6 0
Erica, Cavendishi, per pt.	0	0	0	0		Musk, per dozen	0	0	0 0
„ various, dozen	12	0	18	0		Myrtles, dozen	6	0	12 0
Euonymus, var., dozen ..	6	0	18	0		Nasturtiums, dozen pots	0	0	0 0
Evergreens, in var., dozen	6	0	24	0		Palms, in var., each ..	2	6	21 0
Ferns, in variety, dozen..	4	0	18	0		Pelargoniums, per doz. ..	6	0	12 0
Ficus elastica, each ..	1	6	7	0		Rhodanthe, per dozen ..	4	0	6 0
Foliage plants, var., each	2	0	10	0		Stocks, per doz.	0	0	0 0
Fuchsia, per doz.	4	0	9	0		Tropæolums, various, per			
Geraniums, Ivy, per doz.	3	0	6	0		dozen	0	0	0 0



SEED CORN.

THE temptation to knock out enough corn from any nearest to hand for sowing now will be greater than usual, because the weather is so fine and the entire strength of the farm is absorbed on the land, from the very natural and praiseworthy desire of every sensible farmer to turn this splendid autumn weather to full account for cleaning the land. But do let us remember that good and pure seed is indispensable, and that nothing short of the best seed will answer if we would have a full crop well above the average. What does the low average corn yield point to but bad practice? It is not by any means so dependant upon seasons as many would have us suppose, but is rather owing to inferior seed and inferior cultivation generally. There can be no doubt that very much of the inferior corn so recklessly used for seed in the past contained a large quantity of weed seeds, and that in a great measure accounts for the serious spread of Charlock and Poppy, for those who would use tail corn for seed are unlikely to be particular in other matters.

We want now for the autumn sowing Winter Oats, Beans, Peas, and Wheat, and there should be no difficulty about having them pure and clean. The seed sample should be just as clean as a market sample, and that is only to be managed by repeated screenings, and no old second-hand corn screen will answer. Every farmer should have a corn screen approved by judges at one of the Royal Agricultural Society's Shows, or from a local maker of repute. This is an investment that is certain to repay one, and it ought to do so in a single season. Dirty and foul samples are the corn merchant's and miller's grievance. Cultivation has its influence, but the final result depends so much upon quality, that brightness, weight, purity, and cleanliness all tell, and to all these a good corn screen contributes very materially. It is, therefore, obvious how important thorough screening is both for sowing and for sale.

Equally important is selection, and now is the time to decide whether we have corn sufficiently pure to thresh for seed, or whether seed must be purchased. In the latter case it may frequently be had from a local grower at a slight advance on market prices, failing which it may be had through a cornfactor for a fair price. Much greater attention has been given to seed selection during the last few seasons, and the great specialists in seed corn have the unanswerable argument in reply to complaints of their high prices, that they have no difficulty in selling, so keen are growers to improve their stock, which shows that we are speaking to a recognised fact rather than pointing out a fault.

Is the full importance of selection and improvement recognised as fully in Ireland as in the other part of the British Isles? The question occurs from the suggestion that had due attention been given to planting sorts of Potato of approved merit, and seed that had suffered no exhaustion from wasteful premature sprouting, the

risk of loss from disease would have been much lessened this season. We merely record the thought as it occurs to us, for though it is a little wide of our subject, it is nevertheless intimately connected with the home farmers' interests, and now is the time to select seed Potatoes, and so to store them that when the planting season comes round again they may be firm and plump, with short sturdy shoots as thick as one's little finger.

Having given due care to seed selection, let us be equally discreet in our preparation of the seed bed, and see that it is both clean and fertile. The safe standard of fertility is that which ensures robust growth from the first, and nothing short of this is to be regarded as sound practice. If there is a doubt in the matter it is better to make certain by sowing chemical manure with the seed. Here is the formula :—Half cwt. nitrate of soda, quarter cwt. steamed bone flour, quarter cwt. mineral superphosphate per acre. The hundredweight per acre of nitrogenous and mineral manure is a cheap safeguard against poverty of soil, and the expenditure involved of some 6s. or 7s. upon it points to an increase in bulk of yield, the value of which even at present prices will cover it and the spring dressing, pay the rent, and leave a handsome balance towards the cost of tillages. We like a strong robust plant in our winter corn, so that it may come away quickly in spring, and are willing to run the risk of a slight loss of nitrogen to secure it. This risk of loss sinks to a minimum if the manure is drilled with the seed, as it is then close to the roots, which are certain to absorb most of it. If sown broadcast before the drill and harrowed in it is so distributed over the entire surface that much of it may be washed down to the subsoil by heavy rain before the roots can reach it. The dressing of manure may be applied to Rye as well as to Wheat and winter Oats. Rye is usually sown for an early supply of green fodder for horses and cattle, as well as for folding ewes and lambs. We want it early and plenty of it, both which depend very much upon fertility of soil. In poor soil the Rye plant is always weak and backward ; in rich soil it is strong and forward.

WORK ON THE HOME FARM.

On mixed soil farms where Wheat-growing is still well to the fore early sowing is all-important. We like to begin in the present month, and to get through in October. When the Wheat area extends to some hundreds of acres this is only possible by having the ploughing well in hand, and the drill going by the third week in September. Rye, too, and winter Oats and Beans must also be got in early, and a first sewing of Tares made by the end of the month. Much of the second crop of Clover is being folded by sheep, as the flower heads are so barren of seed, and the ploughs follow the folds closely for Wheat, which is soon got in. We shall also follow some Cabbage and early Turnips with Wheat, as both have been folded with sheep, and the land is in such good heart that there is no question about fertility, and no expense about manures this autumn.

What a boon to the farmer is a flock of well-bred healthy sheep ! Here have we been folding white Mustard, Cabbages, Turnips, &c., since the lambs were weaned, leaving the land so rich in fertility that a full crop of corn is a certainty. No manure bills, but a delightful per contra of plenty of sheep to spare, and a certainty of high prices whenever we wish to sell. This gives a spirit and go to farming such as it has not had for several years, and the sight of our fine herd of home-bred store cattle is equally cheering, for there's money in it, sir ! Our neighbour, Brown, who has made his pile on the Stock Exchange, says cattle are a snare and delusion, for the store cattle his man purchased a year or more ago after faring sumptuously upon pasture, hay, corn, and oilcake were sold recently at the local auction mart for less money than he gave for them. Nor does he receive our advice to try home-bred stock with a good grace, for he has had abortion rampant among his cows. We have no doubt that both his cows and store beasts suffered much from exposure last winter, for they were out on a cold wet pasture daily, and have no suitable yard or lodges for shelter or warmth. Brown has built magnificent stabling for his carriage horses, replete with every modern appliance and decoration, but his cowsheds near them are a snare and delusion, and he certainly has no just cause of complaint at the failure and annoyance resultant from such mismanagement. We mention this because many a gardener having charge of the home farm has to struggle on with inadequate means, and is blamed for losses and failures which it is out of his power to prevent.

THE HOP CROP.

WE have delayed issuing our report this season about fourteen days beyond our usual time that we might be in a position to say what effect the hot weather that set in about that time would have upon the crop.

We have now finished a most careful personal survey of the Hop-growing districts of England, and we are sorry to have to report the extreme heat has not, on the whole, been beneficial ; it has certainly to a limited extent helped the Colgates and late Goldings, but has done great harm to many of the early Hops, especially those on dry soils, almost all of which have gone off with " red mould ;" vermin has also made its appearance in the cones in many gardens, and we fear many will not be fit to pick that are left over until next week. Fresh fly can be found in them ; this is bad, as it foretells an attack of aphid next spring. In making an estimate of the growth on as liberal a scale as possible we should say that 10,000 acres will not produce a Hop, 20,000 acres may produce 3 cwts. per acre, 15,000 acres may produce 6 cwts. per acre, 5000 acres may produce 8 cwts. per acre, 3000 acres may produce 10 cwts. per acre, and 2000 acres may produce 15 cwts. per acre.

We are pleased to say that the best growths will be very grand indeed, and will be of such splendid quality that have hardly, if ever, been surpassed ; we should think these Hops will produce something like 70,000 cwts. ; there will also be about 100,000 cwts. of fair copper Hops picked, and the remainder will be of very indifferent quality, which in ordinary seasons would not tempt brewers, but this season will all be taken for mixing with good sound old Hops, and will be very useful for this purpose. Even at this late period of the picking it is not quite safe to say that 250,000 cwts. of Hops will be picked, as it is probable that many of the gardens that are left unpicked this week may be completely destroyed by red mould and vermin. The Weald of Kent and Sussex Fuggles have withstood the ravages of vermin and mould best this season, and some of the best growths will be found amongst these Hops.

The Continent will not produce more than half of last year's, when every bale went into consumption. America will grow about as many on the Pacific Slope as last year, but the New York State crop will fall short by at least one-third ; last year, although America imported nearly as many Hops as she exported, every bale of their 1889 crop had gone when this season opened. This year it is not likely she will import a bale, as in the first place Germany will have none to spare, and in the second the import duty, which has just been raised to 70s. per cwt., added to the very high prices now ruling at Nuremberg, will put them out of the market, consequently America cannot spare a bale of Hops for England, and if many of the Hops that have been contracted for already should be shipped here, there will be the greatest famine in Hops in America ever known, as the consumption of beer there increases at an enormous rate, the increase this year over last being nearly 2,000,000 barrels.

The position of affairs is unique. America and the Continent produce just enough for their own consumption and no more. England, with an annual consumption of 700,000 cwts. may, if every Hop that is hanging on the poles be picked, grow 250,000 cwts. ; to meet this deficiency there may be 70,000 pockets of sound old English Hops, which, if reckoned as three equal to one pocket of new Hops, will add 30,000 cwts. to the 250,000 grown in England (the Continent has already commenced preparing old Hops for the English brewer, and several thousand bales have arrived marked 1888, which are nothing but worthless Hops of the years 1885, 1886, and 1887 growths, that have all been mixed up and manipulated and repacked. The attention of the Government should be drawn to these packages ; the same trickery was practised in 1882, when worthless Hops of ten years of age were repacked and sold as 1879's. Brewers would do well to refuse to buy any repacked Continental Hops).

Long before the 1891 crop can be secured there will be the greatest famine in Hops all over the world ever known, and lucky indeed will be those consumers who secure their twelve months' consumption while there are some Hops on the market, as it is now certain that even the old beds of Germany will be turned out to keep the brewers going until the next crop can be secured.—MESSRS. W. H. & H. LE MAY, 68, Borough High Street, London, S.E. (in *Andover Advertiser*).

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N. ; Long. 0° 8' 0" W. ; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain
1890. September.	Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min.	In sun.	On grass		
Inches.	deg.	deg.	N.E.	deg.	deg.	deg.	deg.	deg.	In.		
Sunday 14	29.272	58.2	55.1	N.E.	57.6	68.9	47.7	99.1	42.6	—	
Monday 15	30.133	57.5	54.9	N.E.	57.6	73.9	50.4	112.0	45.4	—	
Tuesday 16	30.028	53.0	56.4	N.E.	58.0	74.9	49.2	110.9	43.0	—	
Wednesday 17	29.937	61.6	57.3	N.E.	58.2	73.3	52.2	103.0	47.0	0.253	
Thursday 18	29.910	61.6	57.5	S.E.	58.9	69.8	53.3	114.9	55.0	0.110	
Friday 19	29.934	61.2	57.8	E.	58.9	68.9	52.0	110.6	51.1	0.040	
Saturday 20	29.646	61.1	56.0	S.	58.6	67.7	56.1	111.8	53.1	—	
	29.980	59.9	56.4		58.3	71.1	52.3	103.9	43.0	0.406	

REMARKS.

14th.—Bright throughout. 15th.—Bright and warm. 16th.—Bright and warm.
17th.—Bright early ; thin cloud and haze in morning ; generally overcast in afternoon ; heavy rain in evening.
18th.—Rain in small hours, and generally cloudy till 11 A.M. ; then fine and bright till 3 P.M., and cloudy again after with rain at 5 P.M.
19th.—Bright morning ; generally cloudy afternoon.
20th.—Rain in small hours ; fair morning, with occasional sun ; bright afternoon ; spots of rain in evening.
The rain on the 17th ended a drought of twenty days. The nights have been considerably warmer than in the previous week, and the temperature on the average has been considerably above several weeks in July and August.—G. J. SYMONS.



NATURALLY the desire of owners and cultivators of fruit trees is to see them laden with fruit. To the great majority this pleasure is denied this year, but there are exceptions. Here and there trees may be seen very much overladen with Apples, and have, in consequence, made little or no growth beyond the production of small leaves. Such examples are, however, exceptional, and, as a rule, fruit trees that are not too old or exhausted have made unusually free growth, while the young and inherently vigorous have, to use a familiar simile, grown like Willows. It is the same with trees generally which are systematically allowed to make all the growth that can be forced by unrestricted roots in the summer for cutting out in winter in the process of what is known as pruning. A great deal of this kind of pruning has been done in the past, and will probably be done in the future, the direct result being, as it always has been, must be, and will be, the prevention of fruit.

A few years ago the readers of a popular newspaper were satiated with advice from correspondents on the subject of "What to do with our boys?" Whether they did any better with, or for, the boys in consequence of the discussion is perhaps a moot question, for sometimes good advice is given which by one section of the community cannot be followed, while those who might profit by it fail to do so for various reasons, such as lethargy, stupidity, incredulity, and assumed superiority. That, however, is not the fault of those who strive to be useful, and it may be fairly presumed that there are a few who are apt in turning to account published hints and suggestions that are applicable in their case. A question of interest to many at the present time who are endeavouring to grow fruit is almost a counterpart of the boy question—namely, "What are we to do with our trees?" In many, if not in most, cases that question would probably not be very difficult to answer if the exact condition of the trees could be made clear to an experienced cultivator, together with the surrounding influences, and the treatment to which the trees had been subjected. With this information before them, there are plenty of men who could form a very good opinion of what it would be desirable to do to render the trees as satisfactory as seasons and circumstances permit.

No one who is admitted to possess a fair knowledge of fruit culture needs to travel far, or visit many gardens and orchards, before being driven to the conclusion that by far too many persons who have trees do not know what to do with them. A certain number of these persons do nothing, and they occasionally succeed quite as well as do others who are always doing something, but often doing wrongly. Intelligent readers of the gardening papers to whom practical men contribute have learned much during recent years on the management of fruit trees, and improvement is manifest in many gardens; but there are thousands of trees in the care of persons who either do not read, or skim the papers without thinking, that are a disgrace to a civilised nation—crowded, filthy, moss-encrusted, and starved on the one hand, or young, vigorous, and clipped in like Privet bushes on the other. They are alike pitiable to see. The former may or may not crowd themselves with blossom and worthless fruit, and the latter grow with unwonted vigour for the knife or shears in autumn to put them into shape. Of fruit these latter kind of trees bear little or none,

but the pruner never dreams of that being his fault. If asked why they do not bear he will perhaps tell you the sorts are wrong, the soil bad, or that some stupid man did not plant them right at first. There seems no end to the ingenuity of a man who fails in covering the cause of his failure, and it is deplorable to observe how many either fail in fruit-growing or only succeed in having good crops by chance.

There comes a time in the life of a tree when it is practically beyond renovation. It has had its day and done its duty as best it could under the circumstances, but there are vast numbers of trees that become practically useless too soon because they have been either neglected or mismanaged. The present is the time to afford aid to more or less exhausted fruit trees, the time also to assist effectively others which are not exhausted. Let us take a few typical examples, and see what is best to be done with them. There is not the slightest necessity to draw on the imagination for such trees, for they exist in every county, and in many orchards and gardens in each.

Here is a plantation of very old trees. The most ancient of them were planted at some remote period by somebody's grandfather, of whose pomological work there is no record. In the course of time one here and there, and now and then, has either died or been blown down, and another has been "stuck in" to fill the blank created. This became old before its time, as trees are apt to do under such circumstances. Without any doubt the Anglo-Saxons are an intensely conservative people, and, in rural districts especially, appear loth to depart from the habits and customs of their forefathers in the provision of fruit. Once an orchard always an orchard, would appear to be the unwritten law that has governed the actions of men through many generations, if not centuries; and the old custom of filling up blanks in old Apple orchards with young Apple trees is still in force in many localities. It is utterly bad, but we are bound to recognise its existence, much as the fact is to be deplored. If it is necessary—or, whether necessary or not, thought desirable—to continue a fruit plantation on a site which has become historical, let the blanks in an ancient Apple orchard be filled up with Plums, and in a Plum orchard with Apples, and a much better return may be expected, and will be realised, than if the ancient custom of filling up the ground with the same kinds of fruits which have grown and died thereon from time immemorial. Now, while the leaves, if not fruit, are still on the trees in old orchards, is the time for a critical examination, because at no other time is it possible to arrive at such a correct decision as to which of the trees should be marked for removal and which for renovation.

Many fruit trees, which if left alone, can only be regarded as cumberers of the ground in the future, may be made to yield usefully by judiciously pruning, cleansing and manuring till young trees, planted on a fresh and suitable site, produce what only young trees and good soil can produce—a full supply of superior fruit. When old trees have arrived at a state of decrepitude that they cannot without aid of the nature indicated be serviceable, young trees should always be planted, not among the old, but apart from them, for it is evident that the end of the former is near, and not until the young trees have arrived at a profitable bearing state should the old be wholly destroyed where a continuous supply of, we will say Apples, is essential. More than one young gardener has erred, and suffered for his error, by too hastily uprooting old fruit trees, and thus creating a blank in the supply of fruit, which has been more than inconvenient, pending the time that the young trees he may have planted of the best varieties have become substantially productive. The safe course to pursue is to make the best of the old trees for a time, and it is wonderful how many can be improved by the thoughtful use of the saw and knife now, with the application of the scraper and lime for cleansing the branches, and the generous use of strong liquid manure to the roots at any convenient time in winter or early

spring. So long as a tree which has been neglected can be made with a little attention to bear, if not high class, yet useful fruit, it will be safe to follow the advice of Mr. G. Bunyard, as given in one of his practical papers in the words of the old song—"Woodman Spare that Tree."

The present is the time, and the best of all times, for relieving exhausted trees of the useless parts, and thus concentrating the sap on the more useful, and imparting to them new life and vigour. Weak, crowded, worthless branches should be removed at once. Their true character can be seen now, and it can be determined at a glance which can be advantageously removed and which retained; but only men of long experience and experts in the work can decide with the same accuracy how to proceed with the work when the branches are bare in winter. Moreover, the wounds made by the removal of branches now, and duly pared smooth, heal far more freely than when they are made when the sap is in its most dormant state. In affording assistance to old trees in the manner suggested it is a golden rule to thin out—remove entirely—worthless branches instead of merely shortening them, and neither to remove nor shorten any which, if not strong, are clean and healthy through the direct action of the sun and air on the foliage in summer. These will be the extremities of the branches on the outsides of the trees, and there let them remain. Do not thin them too much, but remove the interlacing branches from the interior of the trees, which can be of no service, but are the reverse, in diverting the sap from the extremities where alone, in the case of such trees, serviceable fruit can be produced.

Passing from orchard standards to established bushes what do we find? Trees in various parts of the country planted twenty, thirty or more years ago. They afforded good crops of fine fruit for a few years, or until they attained the height at which it was intended to keep them, 7 or 8 feet, or as high as a man could reach, and after that they grew "nothing but wood," long, strong shoots in summer, closely cut back in winter after the manner of pollarding Willows. Yet the complaint is they bear no fruit. It would be little short of a miracle if they did, for the spurs below were spoiled by the summer growths above, and these cut away before they could produce spurs in turn. Anything more thoughtless and even barbarous than such practice it would be difficult to imagine. If trees are to be kept dwarf, yet fruitful, exuberant summer growths must be prevented by free cropping in fruitful years, or root-pruning in fruitless seasons. In that way, and no other, the finest of fruit can be produced and handsome dwarf trees, of which owners and cultivators may be proud. But it is not the way to obtain the most fruit from a given space of ground. When that is the object in view there must be no violent restriction with the knife while the roots are left to ramble where they will. A few years ago a gentleman had an avenue of hush Apple trees in his garden; they were 6 feet in diameter and 7 in height. He would not have those dimensions increased on the ground that the cropping of the land would be interfered with. The trees made summer growths between 3 and 4 feet long—a thicket of them, closely cut back in winter. As might be expected the trees gave next to no fruit for years. The owner did not know what to do with them. He had tried manuring (which was worse than useless), he had tried root-pruning (but the work was not half done). He was advised to let a stated number of the strong summer shoots, a foot apart, remain unshortened, removing all others, and where new growths pushed from the cut back parts in spring to rub them out by the sockets. The first summer afterwards the 3 to 4 feet growths were studded with fruit buds, the second they bore splendid fruit, the next the crop was a crowded one, and luxuriant growth of necessity ceased. The trees yielded more fruit in those two years than in the ten preceding, and with a little thinning of the branches as requisite they continued as productive in subsequent years as could be desired. From profitless they were turned into profitable trees, and no further objections were heard about their interfering with the cropping of the land.

Trees that are neither worn out or nearly so by age, nor neglected, or wrongly treated should equally have attention now in the removal of breastwood or lateral growths from the main branches instead of leaving them till winter or spring. A young shoot may be left where there is space for a new branch a foot from the others, and the main branches thus thinly disposed should be well furnished with blossom buds, and eventually laden with fruit. These remarks apply to established trees, for the shoots of young trees should be cut back for the first two or three years for ensuring a strong foundation and producing the requisite number of growths for well furnished trees. This shortening may be deferred till the leaves fall or till spring, according to circumstances; but early autumn pruning generally is of more importance than is recognised by many owners and managers of fruit trees.—J. WRIGHT.

HARDY FLOWER NOTES.

SEPTEMBER has just come to a close, and it is impossible for the lover of flowers to think of the close of the month with equanimity. It seems but yesterday—and yet it is three years ago—since, on the 29th of September, the morning dawned mild and showery, and all was bright and full of bloom, but ere night the wind had veered round to the north-west, our most dreaded wind, and when day broke once more, blackened flowers and stems and bleak desolation everywhere spoke all too eloquently of the power of that pitiless icy wind. I had only the previous day been in a garden where a long walk presented a picture of beauty; long lines of Begonias on either side, with Dahlias in the background, while tall Hollyhocks, and some of finest Ricinuses I have ever seen, broke the regular lines of White Queen and Glare of the Garden. Need I say what this was like on the morning of the 30th? Words cannot depict it, and I leave it to the reader to imagine the scene. With such a bitter gale the hardiest flower had to succumb, and too many were doomed untimeously to depart.

"To see their mother—root . . .

Where they together

All the hard weather

Dead to the world, keep house unknown."

I have no doubt that some who read this will utter a malediction upon me for sounding these notes of evil warning, but their motive is a good one, warning all to keep a good look-out, and by a little timely reflection, save some of our late favourites from being "nipped i' the bud." A worthy neighbour of mine has a late Chrysanthemum which she carefully covers with a cloth when signs of frost appear. This late Chrysanthemum—a late purple Pompon—is one of the hardiest I have ever seen. I do not know its name, but it grows from year to year a true herbaceous perennial, which needs, and receives, no protection or propagation. But enough of winter awaits us without dwelling too much upon it, and let us while they are with us think of the glories of the present.

If there were no Sedums worthy of growth but the one now in flower, *S. spectabile*, often known as *S. Fabaria*, the family would deserve gratitude at our hands for producing such a useful flower. There is something so bright and cheery in its fine large flat heads of pink flowers that we cannot refrain from admiring it. This Stonecrop is sometimes used with good effect as a bedding plant, but grown as such much of its beauty of form is lost, but when grown in single plants of moderate size it is much finer. It has a singular property of intoxicating or stupefying bees, and I have no doubt that "A Lanarkshire Bee-keeper" will agree with me in recommending that the plant should be grown very sparingly where bees are kept. I have heard of one humane lady who carefully lifts bees off her beds of the *Sedum* and lays them on the grass to recover. *Oenothera taraxacifolia* is still flowering away, and although it appears to prefer a light sandy soil, seems also to luxuriate in a moist season. It is perfectly hardy with me, and my plants are fast increasing in size. In my last notes I made mention of some of the *Colchicums* in flower. Others have now come into bloom, and two that I have flowered for the first time are worthy of special note. The first, *C. chionense*, is, as the specific name denotes, a native of Chios, and is, I think, one of the finest of all the chequered varieties. The shape is starlike, and the colour, when the flower is in its early stage, is more crimson-like than *C. variegatum*, the commonest of the chequered varieties. This is one of the *Colchicums* known to Miller and the old authors of works on gardening. The next is *C. veratrifolium*, which is almost equal in value to *C. speciosum rubrum*, but is not of such fine form. Several others, including the double white, are also in flower. I have been anxiously looking out for flowers of autumnal Crocuses, but the

ever welcome *C. speciosus* is the only one which has as yet favoured us with a display of its beauty.

Some of the Tritomas are as fine as when I wrote last, and the late Asters are coming well into flower. One fine seedling, which grows about 6 feet high with me, is very good at present. It forms a pyramid of lilac flowers, clustered, like most of the others, so thickly as to hide the foliage. *A. amellus*, the neatest and best of all to my mind, is coming well into bloom, and several others have opened a few flowers. Many have a considerable resemblance to each other, but when seen at a little distance the points of difference are more noticeable. The Mossy Saxifrages are assuming the beautiful greenness which renders them so valuable throughout the winter months, the finest in this respect at the present time being *S. tenuifolia*. *Rudbeckia Newmanni* remains unapproachable for beauty by all others among the host of yellow composites. There is something exceedingly attractive in the bright orange rays and intensely dark centre. The queen of the early Chrysanthemums, Madame C. Desgranges, with its yellow sport *G. Wermig*, lightens up the border. I have not as yet grown Mrs. Burrell, but hope to test it another season. Gladioli are nearly past, the later sorts being comparatively useless with us in the north, and the garden is beginning gradually to assume a more sombre hue.—S. ARNOTT.

OUTDOOR TOMATOES.

I ONLY venture a line on this subject because I have not seen any outdoor Tomatoes this year or last, even in good gardens, that had such fine crops as my own. I do not pretend to teach, but as my practice seems to be successful perhaps an outline of my cultural routine may be worthy of note.

The season has, of course, been unfavourable. I have not gathered ripe Tomatoes out of doors in June as I did last year; but my plants have done well. We have for a considerable time had as many as we wanted, and to-day (Sept. 25th) I have gathered 37 lbs. of fine sound thoroughly ripe fruit* from just that number of plants, not cutting any which were not completely and thoroughly ripe. Only three of these plants are on a south wall, the remainder being on a larch paling, and mostly facing W.N.W. A large amount remain to be gathered.

I venture to suggest those who fail in the outdoor culture of this popular fruit do not give it sufficient attention. I have been surprised to see a quantity of green growth on plants in other gardens, even as late as this date, whereas I (not pretending to be an authority, but speaking only as one who seems to be successful) allow no stem or leaf growth whatever after the end of July at latest. My variety is Suttons' Main Crop. I do not at all say it is the best for the purpose, but as it serves me well and I know its "manners and customs" I am satisfied. My plants are raised as near the glass as possible to make them short jointed, and kept in a similar position when removed to a cooler house. They are put out about the same time as bedding plants—say the middle of May for an average, and I do not think much of a plant that has not by this time a bunch of flowers, sometimes with the fruit set—planted against the paling in firm soil, well trodden with no manure, and watered occasionally but not too much. They need now, as soon as they begin to grow, a good deal of attention, and should be gone over carefully at least three times a-week, thinning the foliage severely, and cutting away perhaps a good portion of each leaf left if it is so large as to shade the plant. The one-stem system is rigorously adhered to, and any side shoot is rubbed away at once. If left only for a short time it will weaken the stem above it. The very large trusses of bloom are thinned, and any leaf growth from the bunch stopped at once. The plant is carefully nailed or tied up, and the bunches of fruit supported in some manner, or their weight will soon bend and bruise the stem of the truss. About the middle or end of July, according to the season, all growth is stopped for the year; there should then be from six to eight good bunches of fruit or blossom buds on each plant. Now for the first time liquid manure is given, but cautiously; not if the weather is cold and wet. The swelling fruits are tied apart from each other as much as possible. Some (always the biggest) are sure to rot in wet weather, especially if they touch one another or wet remains long upon them; but I do not think we have ever had any of the actual disease.

I find seedlings as good as cuttings, and have not experienced any advantage in growing them in plunged pots to restrict the roots. As English Tomatoes are better than imported, so I imagine (but it may be my fancy) outdoor ones gathered perfectly ripe are best of all. When taken indoors unripe and coloured (I

will not say ripened) in a kitchen or hothouse they always seem to me very poor things.—W. R. RAILLEM.

THERE are many crops of our gardens on which the unfavourable season has had a serious effect, but there is none, I believe, more disappointing than the outdoor Tomato crop. The acquired taste for these fruits is undoubtedly steadily increasing each year, for most salesmen declare that no garden produce meets with so ready a sale. Growers for market are fully alive to this demand, and in endeavouring to meet it secure good profits. I have more than once heard it said that Tomatoes prove the most remunerative of market crops, and any sheltered sunny spot available outdoors, and not otherwise appropriated, is accordingly given up to these fruits.

Probably more plants were raised and forwarded under glass for planting outdoors this year than ever before, and the prospects gave bright hopes at the earliest period, but the frequent rains and humid atmosphere proved fatal to the setting of the fruits. Plants grew well and produced vigorous flower trusses, but unless protected were unable to effect an early set. The unusually early appearance of the Potato disease brought with it great terror to the Tomato grower, who had hoped for fruit on the later formed clusters, but the disease, as was expected, communicated itself to these plants on walls, affecting stems, leaves, and fruit alike. In some cases the attack was so severe as to necessitate the entire removal of the plants without any crop to repay the trouble of the several previous months, and others left presented but a sorry figure. Such experiences may not be known to all, but of the various gardens I have visited I know but one where a good crop is forthcoming outdoors, and that is under the care of Mr. W. Iggulden. On the low front wall of some forcing houses, and on the more lofty Peach wall, both having a southerly aspect, there are numbers of plants carrying excellent crops of large size, and many of the fruits have been cut, and others are ripening on the earlier perfected clusters.

Several varieties are planted, but all are not alike free. Those that are bearing the greatest amount are the crimson Mikado, Ham Green Favourite, Chemin Red, Conference, and The Peach. The first-named is a selection from the original introduction, and differs from that only in colour, and if possible better form. Ham Green is a very free bearing sort, and now has a good reputation, but Chemin Red is not so generally known, though there is a possibility that it may prove a rival for that previously mentioned. In appearance it closely resembles Ham Green, but the quality, which is the chief essential, is said to be superior, and that is saying a good deal. It was sent out, I believe, by MM. Vilmorin of Paris, by whom many excellent garden products are distributed.

The Conference has been referred to several times this year and last autumn as being the best flavoured Tomato yet sent out, this being decided, I think, at Chiswick last year, when so many sorts were grown on trial. This quality, combined with great fruitfulness, will no doubt secure for this the premier position among these popular fruits with all save perhaps exhibitors, for with these Perfection must still hold sway, on account of the large size to which it may be grown. The Peach produces small or medium sized distinct looking fruits in abundance, on open walls at Marston, in company with those before named.

Mr. Iggulden attributes his success mainly to the great warmth of the site occupied by these plants, the walls of the forcing houses being naturally warmed through from the hot-water pipes within, as they pass along the whole length in close contact. As might be naturally conceded, the pollen has greater chances of becoming dry in such favourable quarters than is possible when more fully exposed.

Disease, although present, is not nearly so violent as with most growers in the district, and as yet but little inconvenience has been experienced in this matter. The attack of *cladysporium* has been very common under glass, but it is a somewhat new experience to find that it thrives in the open air, but not to such an extent as to cause any alarm; still it would be more satisfactory if the past opinions of respected authorities could be true, namely, that it could not live or spread outdoors.

Another item that has contributed largely to the production of so good a crop is firm and not rich soil. That in which they are growing is a narrow enclosed border from which a similarly heavy crop was taken last year, with only a slight top-dressing placed on in the spring for the benefit of some Lily of the Valley roots, which are part occupiers of the soil, rather than for the Tomatoes. In such a firm medium the growth becomes sturdy, and large clusters of fruit are seen, almost touching the ground in some instances.

One of the most shy bearers that I could find at the time of my visit was the yellow fruited Golden Sunrise, which was rather disappointing, this being one of Mr. Iggulden's first favourites on account of the quality of the fruit. Sutton's Golden Queen with

* Query, fruit or vegetable? I think "Punch" puts this question in the mouth of a customer at a restaurant, with the waiter's answer, "Neither, Sir, it is a hextra!"

us is the most abundant cropper of all among our plants outdoors, Daniel's Crimson Queen and Ham Green showing secondary favours.

It would be most interesting if other readers would give their experience of the season with regard to the outdoor crop of these popular fruits. Reports, so far as I have noticed, have not been favourable this year, but there are possibly some districts in which Potatoes are not so badly or so early disease-stricken where good crops are the rule, at any rate it is to be hoped that it is so. It would be considered a boon if good returns were general among poor as well as the more wealthy, for they are undoubtedly becoming a luxury. Failure of the outdoor fruits and consequent higher prices charged, will prevent many from investing in them.—W. S.



DENDROBIUM SCHNEIDERIANUM.

PART 103 of Messrs. B. S. Williams & Son's valuable "Orchid Album" gives good coloured illustrations of *Vanda teres candida*, *Zygopetalum crinitum coeruleum*, *Miltonia Bleuana splendens* (which has been described and figured in this Journal, but unacknowledged in the references accompanying the description), and *Dendrobium Schneiderianum*. Concerning the last we extract the following interesting particulars:—

"The genus *Dendrobium* is now a very large one, and the number of species and varieties which adorn our stoves are both numerous and beautiful. The one whose portrait is here produced is most chaste and elegant, arguing well for the rich combinations which we may hope to see when the many seedlings which now are in their infancy have arrived at a flowering stage. Natural hybrids amongst the species of this genus would not appear to be common, but some examples have from time to time appeared to which a hybrid origin has been ascribed. These, however, have been collected in sufficient quantities to cast a doubt upon this supposition; and they have, moreover, been collected in wide and distant localities. Our specialists at home have produced a few very beautiful kinds, but it must be confessed that this genus has not received the attention at their hands which the Lady's-slipper family has done. The first hybrid *Dendrobium* was obtained by an old and respected friend of ours, Mr. Dominy, when engaged in the nursery of the Messrs. Veitch at Exeter, and it very deservedly bears the name of *Dominianum*. It is a very bright and cheerful flower, raised between *D. nobile* and *D. Linawianum*, the latter being then known under the erroneous name of *D. moniliforme*. Since then we have had *D. Ainsworthi* and *D. Ainsworthi roseum*, raised by Mr. Mitchell, the last-named variety being figured in these pages, t. 20. The same forms were also obtained by Mr. Osborne when gardener to H. J. Buchan, Esq., at Southampton. Grandier forms of the same cross have also been obtained by Mr. Seden at Messrs. Veitch's, in *D. splendidissimum* and *D. splendidissimum grandiflorum*. *D. Leechianum* is also a superb form, raised by Mr. Swan when at Fallowfield, Manchester. This also is from the same parents as the above. Sir Trevor Lawrence has also been a successful hybridiser of *Dendrobiums*, and we have seen some exquisite flowers in his garden at Burford Lodge, Dorking, which we hope to be able to figure, and lay before our readers in the early future.

"The plant, however, whose portrait we here lay before our subscribers, is the result of a cross between *Dendrobium Findlayanum* and *D. aureum*, and is at once beautifully chaste and very distinct. The plant was fertilised in the collection of Oscar Schneider, Esq., of Fallowfield, Manchester, and the seedlings were raised by Mr. Holmes, gardener to C. Moseley, Esq., at Grange-thorpe, Rusholme, Manchester, and it is through the kindness of Baron Schroeder, The Dell, Staines, that we have been afforded the opportunity of laying its beauties before our readers.

"*Dendrobium Schneiderianum* is a plant having much the character and appearance of its first-named parent, *D. Findlayanum*, in habit of growth, and its flowers are large and showy, mostly produced in pairs on long pedicels. The sepals and petals are sub-equal, having the ground colour creamy white, tipped with rosy purple. The lip is half rounded at the base with an acuminate point, which is also rosy purple, behind which is a white zone. The base of the lip is downy, rich orange yellow, bearing numerous veins and streaks of orange or purple. The plant is deciduous in habit, losing all its leaves before flowering;

but so freely are the blooms produced that one does not appear to notice the deficiency. The plant appears to be somewhat strong in constitution, and will doubtless become stronger as it increases in age. It should be planted in good peat fibre and sphagnum moss, using some moderate-sized nodules of charcoal to keep the whole open and free. This soil requires to be made firm, and the drainage must be perfect. We have found it to thrive best when treated as a basket plant, and hung up near the glass. During the growing season it requires an ample supply of water to its roots, and moisture in the atmosphere, but after the pseudo-bulbs are mature and the leaves begin to fall less heat and less water will be necessary; indeed very little water should be given during winter. At the latter part of winter or early in spring the plants should be watched for the pushing out of the flowers, and upon these becoming visible gentle waterings should be given, and the temperature in which the plant was wintered may be raised a few degrees."

GROWING AND SELLING FRUIT.

(Continued from page 267.)

BLACK CURRANTS.

As regards profit, this is the next fruit on the list, and will grow in any situation, although it is not advisable to plant it in a poor dry soil. It does best in a rich deep loam which is moist, but not too stiff and heavy.

PLANTING.—This should be done in the autumn, as for other fruits. The plants should have been grown two years in the nursery from the cuttings, and will then yield a nice lot of fruit the second season after planting. They are easily raised from young shoots about 9 inches long, put in the ground firmly any time between September and March, in rows $1\frac{1}{2}$ foot apart, and 4 inches between the cuttings. After severe frosts they will require pushing into the ground tightly again to make them quite firm, or they will not make roots. In the following autumn they should be transplanted to 2 feet between the rows and 1 foot from plant to plant. The next autumn they should again be lifted, and planted 3 feet between the rows and 18 inches apart, and after another season's growth they will be ready for their permanent quarters; but as a rule, bush fruit trees may be bought in quantity from 10s. to 15s. per 100, and it is often the cheapest in the end to buy plants large enough for planting at once, instead of waiting to grow them from cuttings. They should be planted out when large enough in rows 5 feet apart each way, or if the ground is rich 6 feet apart will be the best. The plants should be "angled"—that is, the plants in one row should form the point of a triangle with the two plants in the next row. By planting them opposite the centre of the space, instead of opposite the other trees, they may be planted among standard Apples or other fruits, and will give good crops, although not so much as when they have a plot of ground to themselves. The cost of plants and planting will be about £12 per acre.

PRUNING.—In this operation it must always be borne in mind that the Black Currant fruits best on wood made the preceding summer; it is therefore best to encourage a free growth by cutting out the old wood after it has borne for two or three seasons, and training young branches up in its place. To secure this end it is not advisable to grow Black Currants on short stems, as is often done with Red Currants, as they are all the better if they throw up strong young shoots from the roots occasionally. In pruning young plants raised from cuttings they should be cut back until five or six good strong shoots are obtained to form a tree. These should then be left full length, and any small shoots cut back to one bud. After this all shoots that cross others may be cut out yearly, and the weakest shoots cut close so as to obtain a nice even shaped tree, with an open centre like a teacup. All branches that droop down lower than 18 inches from the ground should be cut off, as fruit that gets splashed with dirt is of no use in the market, and only fit for wine-making. All old wood that is becoming weak should be cut out, and if a plantation begins to fail from old age it may be cut down to the ground and given a heavy dressing of manure. One year's crop will thus be quite lost and part of another, but the fruit will be much larger afterwards on the young shoots which spring up abundantly from the old roots. After pruning is over the ground between Black Currants should always be forked over, putting manure on first if the ground is poor. Black Currants are sometimes pruned as "great or piecework," at about 1s. per hundred trees.

MARKETING THE FRUIT.—In districts where large quantities of this fruit are grown they are generally gathered by women at 4d. to 8d. per half sieve (about half a bushel), according to the crop. They should not be allowed to get soft before gathering, or

they will smash when travelling to market. The half sieves when full should weigh 24 lbs. nett, and before the fruit is placed in should be lined with paper. In the fruit-growing counties what is called "fruit paper" is used; if this cannot be had "cap paper" will do, but is not so cheap. A sheet should also be put over the top of the fruit, and the package finished off as recommended for Apples. If gathered when thoroughly dry Black Currants will not spoil so soon as some other fruits, but all these soft fruits should be sold and used as soon as possible after gathering. Those sent to Covent Garden are generally sold again within twenty-four hours from leaving the plantations. Prices vary from 2s. to 4s. 6d. per stone of 14 lbs., according to quality and time. Those sent to London markets are sold by the half sieve at about the same rate. An acre of trees that are four years old should give about 600 lbs., increasing rapidly to 5000 lbs. in an ordinary season, and double this quantity when there is a heavy crop, and under the highest cultivation without a "top crop"—that is, standard Apples, &c., above them.

VARIETIES.—Lee's Prolific, Black, Naples, and Carter's Champion are the best; the latter has by far the largest fruit.

CULTIVATION.—The plantations where Black Currants are grown should be forked over annually after pruning, and all weeds should be destroyed during the summer before they get large. A liberal dressing of farmyard manure once in three years will be of great benefit in promoting the size of the fruit.

ENEMIES.—With the exception of birds this fruit has nothing to interfere with its success; even frost in spring seldom takes any effect on it.

GOOSEBERRIES.

This is a good fruit to grow for sale, as they can either be disposed of green—in which state they often give the best returns—or they may, in the case of the red varieties, be left until ripe. In Kent, where large quantities are grown, they are generally gathered by women and girls, who earn good wages at the rate of 4d. per half sieve for green ones, and 2½d. to 3d. for ripe fruit.

PLANTING.—The best time for this as for all fruits is when the leaves begin to change colour; but any time between October and March will do if there is no severe frost or snow at the time. Gooseberries may be raised from cuttings in a similar way to Black Currants, except that Gooseberries are best grown with a stem, from 6 inches to 1 foot high, to allow of digging, &c., underneath, and to keep the fruit from the ground, also to prevent so many strong shoots growing in the centre of the tree. The cuttings should, therefore, be not less than 9 inches in length, as 3 inches should be put into the ground and trodden in firmly. All the buds should be cut off Gooseberry cuttings except three or four at the top, to prevent suckers springing up from the root. The distances for planting should be the same as for Black Currants. The Gooseberry will thrive in a stony soil better than Currants. The cost of planting per acre will be about the same as for Currants.

PRUNING.—For young bushes this consists in selecting six or eight main branches springing out evenly not far from the top of the stem. Thus, if the cutting throws out three or four shoots the first year they may be cut back to within 4 inches at pruning time, when each one will throw two or three good shoots the next season, and enough may then be selected to form the future tree, keeping the centre open and cutting always to buds that point in the right direction for the branch to grow. Some varieties, and especially Warrington, persist in bending over towards the ground, and require pruning back well to get the main branches as upright as possible. All strong roots in the centre of the tree should be cut clean out and the small side branches cut off within an inch of their base, leaving one almost full length occasionally in the thinnest parts of the tree, and always leaving a good leader at the point of the main branches until they get 4 feet in height. Summer pruning is also of great benefit to the Gooseberry. This consists in cutting out all young shoots in the centre of the tree and elsewhere which would otherwise be cut out at the winter pruning. By cutting them out in summer as soon as the fruit is gathered the remaining buds on the main branches get a better chance to ripen and store up nourishment for next year's crop. The work is also much better done in mild weather than in the winter. In the Kent plantations Gooseberries are pruned by the "tree cutters" in "piecework," during the short days of winter at about 1s. 6d. per 100 trees, according to size.

CULTIVATION AND MANURING.—Like all other bush fruits, Gooseberries pay well for an application of manure about once in two or three years. Night soil is often given to them in Kent, and materially assists in bringing very heavy crops of fruit to perfection. The soil is removed from under the bushes early in the spring, forming a basin-shaped cavity into which half a pailful of night soil is poured, and next day the earth is put back again which had been removed. Large quantities of London manure is also

brought down the river in barges, and after partial decay is applied during the winter months before the plantation is dug over, but there is no manure so good as that from a cowyard when it can be got. The plantations should be kept perfectly clean by hoeing and hand-weeding if required, and the ground should always be dug roughly in the winter after the bushes are pruned.

VARIETIES.—Whitesmith for gathering green, Crown Bob either green or red, Warrington for late red fruit. A new variety called Early Kent has lately been very highly spoken of for its earliness, which is a great consideration in Gooseberries for market.

GATHERING AND MARKETING.—Gooseberries, if *early*, pay well for gathering and sending to market green, and for this purpose Whitesmith is the best among the older varieties for early work. But Early Kent is said to be much earlier. The early sorts should be planted in the warmest part of the ground, in order to get the full advantage of the early prices, and all of the "White" Gooseberries should be gathered in a green state for market, as they do not sell well when ripe. Some of the Crown Bobs may also be gathered green, or all of them if prices are good. Warrington generally pays best when ripe. I say *ripe*, but ripe Gooseberries for market must only just be red. If allowed to get quite soft they are apt to split in damp or showery weather, and there is thus a risk of great loss, which is avoided by gathering earlier. Also they will not stand handling at the market if overripe; neither will they travel so well; but if required for sale near home, the wishes of the buyers must be considered. Green Gooseberries should realise from 2s. to 3s. per stone at the market, ripe fruit 1s. 6d. to 2s. 6d. An acre planted 5 feet apart each way should yield the first year about 40 stones of green fruit, or 60 stones when ripe, worth £4 to £5 clear of expenses, and this will increase yearly as the trees grow (if the crop is not spoiled by frost), until at six or seven years after planting they should have reached a full size, and give a crop of 5 tons per acre, worth £50 at a low estimate clear of expenses. It is possible to have double this amount occasionally by high cultivation and getting the best prices in the market. As Gooseberries may be grown among standard Apples and other fruits, they will add considerably to the returns, although it is not possible to grow such large crops of under fruit in mixed plantations. They should be packed for market in half sieves containing 2 stones, or 28 lbs. nett, and finished off as advised for Black Currants.

ENEMIES.—Birds are very troublesome to the Gooseberry grower, both when the fruit gets ripe (at which time they must be scared off by shooting), and also by eating the buds off when the trees are in a dormant state. It is at this stage when most mischief is done, as every bud eaten then means the loss of two or three Gooseberries. Strings of white cotton crossed in various ways over the trees by twisting them round four of the most prominent branches is one of the best methods of frightening them away. When damage from this cause is expected the trees should be pruned, and cotton put on them before January, as pruning is not easily done after the cotton is on. Bullfinches and sparrows are the most destructive among the buds. All of the former should be destroyed, as they do no good to the fruit grower to counterbalance the mischief. Sparrows do some amount of good in summer by devouring caterpillars, and must not all be destroyed, or the remedy may be worse than the disease. The Gooseberry caterpillar often does a vast amount of damage if not destroyed as soon as it appears. Handpicking is the best and safest remedy for these. Dusting the bushes with white hellebore powder is often recommended, and is very effectual, but it is a dangerous poison, which should only be used with the greatest care. All traces of it should be washed away with clean water a few days after.—W. H. DIVERS.

(To be continued.)

HOLLYHOCKS.

ONE of your correspondents, Mr. George Steel, Cornhill-on-Tweed, is devoting considerable attention to Hollyhocks, and has one of the best collections in the kingdom, and I hope that shortly we shall, through the Journal, hear from him the result of his experience in culture and the disease to which the Hollyhock is unfortunately liable. I have not the pleasure of his personal acquaintance, but he is a frequent correspondent on matters relative to the Hollyhock, Pansies, and Violas, and a few days ago he sent me a small box of Hollyhock blooms by post, which were a glad-some sight, for in size and quality they vividly recalled the good old Hollyhock days of close upon forty years ago, when those glorious old flowers, Lizzie, Beauty of Cheshunt, Glory of Cheshunt, Model of Perfection, White Globe, Pourpre de Tyre, Safranot, and many others were so popular and so fine.

It is fully evident that the Hollyhock is rapidly becoming again a popular flower, especially in the midlands and north, and cultivators will confer a great boon if they will freely convey through the columns of the gardening papers their experience of the disease and remedies for cure or prevention. Mr. Steel sent me blooms of a dozen varieties, and remarked that "blooms are of course small now, and as they do not seem to travel well I have sent you buds so that you can see their colours, and perhaps travel better." The following are the varieties:—

Pride of Layton (Finlay).—A flower of the finest quality, rich salmon colour, large, and very full high centre, and good guard petal.

Grace Darling (Thompson).—Shaded pale salmon, a very fine flower, very close high centre, large, and with excellent guard petal.

Walter Scott (Steel).—A seedling of 1890, pale salmon buff, a very fine flower of a bright shade of colour, large, and very full high centre, and capital guard petal.

Mrs. Joseph Oliver (Steel).—Seedling, 1890; shaded pale flesh and rosy lilac, very close high centre, and medium guard petal, and distinct.

Favourite.—Very light pink, shading to a lighter colour, a beautiful blending of colours, large, close, high centre, and good guard petal; a very fine flower.

Mrs. George Steel (Steel).—Seedling, 1890; bright shaded salmon tinted pink, a very refined flower, close well-formed centre, and perfect guard petal; a grand flower.

Vesta (Chater).—A deeper shade of colour than Mrs. G. Steel, having a more decided salmon shade in it, but rather rough in outline, and pockety, still a telling flower in a stand.

Nobilis (Chater).—Very pale buff tinted with primrose, a distinct and very fine flower, grand in high close centre and guard petal.

Agnes Royle (Oliver).—Pale yellow, a grand flower in every respect; extra fine.

Octoroon.—Deep maroon, tinted crimson, a very fine flower, and telling in a stand.

Leviathan (Chater).—Light scarlet, a beautiful flower in every way, with plenty of centre.

Robert Royle (Oliver).—Lighter in colour than Leviathan, and very close high centre; a very fine flower.

Perfection (Chater).—Mottled or shaded pink and lilac, tinted white; a distinct flower of first-rate qualities.

W. Dean (Downie).—Bright salmon rose; a flower of refined quality, with excellent guard petal, and close high centre; very fine.

Maggie Bain (Thompson).—Bright deep rose; a grand flower in every respect.—W. DEAN, *Sparkhill*.

NOTES ON EARLY ENGLISH HORTICULTURE.

(Continued from page 155.)

I HAVE long had in contemplation an essay or article upon the benefits England has received from Scotland, which could be proved to be neither few nor unimportant. The annals of British gardening during last century, for instance, would show that South Britain was greatly indebted for its horticultural progress to a number of natives of the northern part of the isle who migrated to the nurseries and establishments in or about London, and some other towns. Dr. Johnson would probably have growled disapprobation, and complained that they took the bread out of the mouths of honest Englishmen, but the laddies set a good example, displaying Scottish prudence, patience, and perseverance, which might well be copied by their fellow workers. Possibly they were a trifle too conservative, over-cautious in adopting improvements or changes, but when the utility of these was seen the Scotch gardeners never failed to turn them to the best account. A writer upon the subject of horticulture in the reign of George III., when cataloguing the sins of gardeners, seems to consider slovenliness the greatest, and this, I think, is seldom the fault of a Scotchman.

That the Scotch folks generally were slow in the introduction of new plants appears from the statements of travellers, who express surprise that when even in the gardens of English cottagers there was to be found a number of vegetables, those of the better class in Scotland often showed only varieties of the Cabbage, Onions, and Potatoes. Again, Cromwell's soldiers are credited with having planted in Scotland some hedges of Hawthorn, and pointed out to the people there how great were the advantages derived from the protection hedges give to fields or gardens, but a hundred years after they were seldom to be seen, and indeed to this day there is a scarcity of hedges both in Scotland and the northern districts of England. If these may spoil a prospect sometimes, they soften the grim outlines of an uninviting landscape,

and many a garden would be improved by being thus screened from cutting winds. I may note in passing, that I find there are still persons who object to hedges on the ground that they afford shelter for insects—a mistaken notion. Indeed, in the case of fruit trees it is likely that some caterpillars, which would otherwise attack them, are left to settle upon the Hawthorn and Sloe when they are used for hedging. One thing that existed in Scotland during the infancy of horticulture, of which there is no trace in England, was a series of small lodges or societies of gardeners, who met from time to time for the exhibition of plants grown, and the interchange of ideas. Many of these were chiefly composed of mechanics or small tradesmen who devoted their spare hours to flower culture, the taste being traceable, not to English influence, but to that of French weavers, who settled at Paisley, Edinburgh, Glasgow, and other places. The Edinburgh Botanic Garden originated about 1680, made only small progress till 1767, when it was enlarged, and extensive ranges of conservatories or hothouses erected under the direction of Dr. Hope, and in the middle of that century a large botanic garden was formed by the Marquis of Bute, which attracted much notice. But special honour belongs to Mr. James Justice, as one who, by personal exertion, and through his travels on the Continent in the reign of George II., brought into view many new species and varieties. His father was a merchant, and having dealings with the Dutch, they offered him bulbs unknown in England, some of which he bought, and this, 'tis said, led his son to become such an enthusiastic amateur, that, though a lawyer, he was tempted to an outlay upon his garden at Crichton, by which he got into difficulties. He had the first Pine stove seen in Scotland, and he was presumed to have had one year the largest collection of Auriculas in Europe. A book containing the results of his many years' experience was published in 1754, and, not to limit its sale to the Scotch, he called it the "British Gardener's Director." It was apparently the first standard work of the kind brought out north of the Tweed, and contained valuable information about the whole range of outdoor gardening as then practised, also on greenhouses and stoves.

About the middle of the eighteenth century the man styled by Cowper the "omnipotent magician Brown" began to exercise a great influence upon horticulture, and his fame was for a time unrivalled as a designer of flower gardens and pleasure grounds. People called him "Capability" Brown, from his frequent use of that word when he was describing the plan he meant to pursue in forming a new garden or remodelling an old one, but his name was Lancelot, and though not Scotch, he was a borderer, hailing from Northumberland. Brown made his start as a worker in the kitchen garden at a house near Woodstock, and afterwards he attained to the position of chief gardener at Stowe. Lord Cobham becoming his friend, by this peer's recommendation he got the appointment of gardener to the royal Palaces of Hampton and Windsor, which brought him to the pinnacle of his popularity, but in fact there was nothing particular about his methods. His gardens were even more formal than those of the older style, and showed less variety, yet there was hardly a nobleman or gentleman who did not consult Brown at some time or another. From Scotland and Ireland also he received pressing invitations, and he sent pupils to those countries. He himself never left England, though he had tempting offers even from Russia. His ideal of a flower garden, if he had space sufficient, was to have it gently sloping to an artificial stream at the bottom, and beds on each side of the lawn which it divided corresponding formally with each other, in the middle of every one a tree or shrub. Around the whole garden ran an upper walk with a background of trees or tall shrubs, amongst which Roses were sometimes placed for effect. His favourite method of planting trees was in circular clumps, large or small, and in belts; which led Sir W. Chambers to remark, that if Brown's mania was generally followed there would ere long not be half a dozen trees in a row left standing in England. Some of his rivals greatly ridiculed what they called his "kitchen garden" mannerism, arising, they hinted, from his early career. But he was always ready with an answer, as when they criticised a place he had laid out at Latimers, Bucks, cramming there a number of beds and shrubs into a narrow valley; this he defended, saying it was a "playful style," though the expression seems incongruous. We must regard him as one who did little to advance horticulture, except indeed by showing what ought to be avoided.

We have referred to Kent, one of Brown's predecessors in the art of landscape gardening, and mention should be made of another of that name, Charles Kent, who was attached to the English Embassy at Brussels in the reign of George II. He had previous to his residence abroad taken no special interest in gardening, but while in the Netherlands he made a study of the matter during some tours, and was surprised at the diligence the Flemings exhibited. He drew up a report upon the Flemish methods, dealing specially with their skill in selecting and applying manures to the

land, which he presented to the House of Commons in 1766. Upon his return to England he made further investigations upon the character of soils, as ascertainable from the plants that would naturally flourish upon it. For instance, he pointed out that it was always good land where Oaks grew, or the Meadow Foxtail and Cocksfoot Grasses.—J. R. S. C.

NOTES AT CARDIFF CASTLE.

THERE are two kitchen gardens at Cardiff Castle about four acres in extent each. Both may be regarded as suburban gardens, as they are only divided from the town of Cardiff by a wall, and I state this as my subsequent remarks will indicate that it is possible to grow first-rate Apples and Pears in such situations. Each garden contains a great many fruit trees, both on the walls and as standards. The latter line the walks everywhere, and many are also grown in lines through the vegetable quarters. The majority were planted about twelve years ago. The growth they have made since is of the most satisfactory description. Those who have read Mr. J. Wright's book on "Profitable Fruit Culture" will find some of these trees illustrated therein, and they may well be shown as examples anywhere. All tendency on the part of the trees to become crowded has been rigidly frustrated. Each branch stands clear of its neighbour, but they have been allowed to ascend to about 12 feet, thus giving an average of growth of 1 foot per year. Every branch is furnished throughout with luxuriant foliage, and bristles with well developed buds. They are in the best of health and exceedingly clean. They indicate the most careful training from the first, and must receive the greatest care at the present time. The branches of Lime, Sycamore, and other trees come very near drooping over the garden wall, and are not many feet from the wall trees. The foliage of these, as is common at this season, is much overrun with red spider and other insects; but none of them appear to have gained a footing on the fruit trees, and the line of distinction is clearly marked. The Apples are chiefly growing on the free stock. A few on the Paradise are not regarded with favour. The soil may be described as a light loam; the walls have no coping, and no attempt is made to protect the blossom in spring, and the fine results secured can only be attributed to high culture.

At present the crops are most remarkable both for their extent and quality. Many of the branches, particularly on the Apples, have had to be staked and tied up to prevent the weight of fruit breaking them down. The most fertile are of Apples—Ecklinville Seedling, Lord Suffield, Lord Grosvenor, Keswick Codlin, Pott's Seedling, Annie Elizabeth, Beauty of Hants, Wellington, Nelson's Glory, Emperor Alexander, Alfriston, New Hawthornden, Beauty of Kent, Worcester Pearmain, King of Pippins, Nonpareil, Sturmer Pippin, Court of Wick, and Devonshire Quarrenden. Some of the specimens of Ecklinville were upwards of 1 lb. in weight, and owing to the enormous crop of this size they gave one the impression of being the best of all; but none of the others were far behind it in their respective merits. Pott's Seedling was an excellent clean sample, and the old Keswick Codlin was hardly recognisable in its excessive development; but size was not their only recommendation, as the quantity was there too, and it was computed that many of the trees not yet in their teens were carrying from 1½ cwt. to 2 cwt. of fruit. I would make special remark of Ecklinville Seedling for the benefit of your South Wales readers, as being a variety admirably adapted for their locality, for apart from the success at Cardiff Castle it is an invaluable sort with Mr. Stephen Treseder, and several other growers in the neighbourhood of Cardiff and South Wales.

The best of the standard Pears are Pitmaston Duchess, Jargonelle, and Williams' Bon Chrétien. The same kinds are also excellent on the walls, as well as Marie Louise, Beurré Rance, Beurré d'Amanlis, Easter Beurré, Beurré Clairgeau, Glou Morceau, Beurré Bosc, and Beurré Diel. The fruit of Pitmaston Duchess takes the lead here as much as the Ecklinville Seedling amongst the Apples, but the produce of all the others is remarkably fine, being large in size, clean, abundant, and evenly distributed all over the carefully trained and most vigorous branches. Considering that none of these trees were protected while in bloom, and the most ungenial season they have had to contend with, the results are marvellous, and although there are many striking features in the gardens at Cardiff Castle none do Mr. Pettigrew more credit than the Apple and Pear trees.

MELONS.

No matter what time of the summer we visit Cardiff Castle we are sure to find a fine crop of Melons. I have seen them year after year, and much as I have been struck with their superiority in former times I do not think I ever saw them better than they are at present. The plants are grown in a loftier span-roofed house than is generally devoted to Melons. They are planted in the side beds, which are about 1 yard in width and 1 foot in depth. Top and bottom heat is provided. The plants stand at a distance of 4 feet from each other. The distance from the soil to the trellis is a little over 3 feet, and a thick bare stem, like a Vine rod, occupies this space and then branch out over the trellis, which is from 10 to 12 feet high. The whole trellis is covered with a luxuriant mass of strong healthy shoots and huge green leaves absolutely destitute of the slightest trace of disease or insects. The fruits are evenly distributed over the trellis, and the size was much in excess of what we are accustomed to see. The chief variety grown is Carter's Holborn Favourite; this is one of Mr. Pettigrew's raising, and it does

him much credit, as none of the fruits would be under 6 lbs., some would reach 10 lbs., and the average would be 8 lbs. They were beautifully formed, prettily netted—in fact, most handsome, and as the flesh is a greenish white and the flavour much above the average the fruit, although some might be inclined to think them too large, are admirable in every respect. Another new variety raised and grown here, but not yet in commerce, is the result of a cross between Holborn Favourite and Longleaf Perfection. It, too, is a large Melon, with a partially netted beautiful skin and most pleasing flavour; indeed, no one could see the Melons at Cardiff Castle without pronouncing them perfect; but Mr. Pettigrew does not believe in the drying-off system, not even on the eve of the fruit ripening, and he attributes his unusually handsome fruit to copious waterings and the great luxuriance of the plants. A round earthenware ring or collar about 1 foot in diameter encircles each stem; no water is ever given within this circle, but the other part of the bed is watered almost daily, and the roots, plants, and fruit testify to the soundness of this practice.—M.

A PECULIAR GLOXINIA.

FLORAL freaks have seemed to be somewhat frequent this year, for we have had a number submitted to our notice, and amongst them



FIG. 34.—A PECULIAR GLOXINIA.

several Gloxinia flowers have been sent at different times. That depicted in fig. 34 is remarkable for the fact that two or three flowers were received identical in formation. The ordinary corolla was of the usual form and colour, but there was a thickening towards the base, and five even segments the same colour as the tube were strongly recurved, alternating with the lobes of the calyx. At first glance it would be taken for an enlarged calyx, but that organ is quite of its normal form, and its lobes can be seen in the sketch. Varieties of this kind are not usually ornamental, but in this case the flower had a rather pleasing appearance, but it is doubted if the freak could be perpetuated.

ROYAL HORTICULTURAL SOCIETY.

THE following is the official list of awards made by the Committees at the recent Grape and Dahlia Conference at Chiswick:—

AWARDS OF THE FLORAL COMMITTEE.

Silver-gilt Banksian Medal.—To Messrs. Paul & Son, for Dahlias; Messrs. J. Laing & Co., for Dahlias, and also for Begonias; Messrs. J. Cheal & Sons, for Dahlias; Messrs. Keynes, Williams & Co., for Dahlias; and to Mr. Charles Turner, for Dahlias.

Silver Flora Medal.—To Mr. Geo. Phippen, for Dahlias; Messrs.

Rawlings Bros., for Dahlias; Mr. J. T. West, for Dahlias; Mr. T. S. Ware, for Dahlias; and to Messrs. H. Cannell & Son, for Dahlias.

Silver Banksian Medal.—To Messrs. Dobbie & Co., for Dahlias; Mr. Geo. Humphries, for Dahlias; Messrs. Saltmarsh & Son, for Dahlias; Messrs. Heath & Son, for Dahlias; Messrs. H. Cannell & Sons, for Begonias; and to Messrs. Harkness & Sons, for hardy flowers.

Bronze Banksian Medal.—To Mr. J. Tranter, for Dahlias; Mr. W. Salmon, for Dahlias; Messrs. Reid & Borneman, for Chrysanthemums; and to Messrs. J. Peed & Sons, for Dahlias.

Awards of Merit.—For Chrysanthemum (Pompon) Miss Lilly Stevens, from Messrs. Reid & Borneman; and Lælia Eyermann, from Messrs. Pitcher & Manda.

DAHLIA CONFERENCE.

Certificates of merit were given to the following blooms, as shown in the stands of the various exhibitors:—Centennial (C.), from Messrs. J. Cheal & Sons; Melita (C.), from Mr. T. S. Ware; Comedian (F.), from Messrs. Keynes, Williams & Co.; Beauty of Arundel (C.), from Mr. Burbury; Eldorado (S.), from Mr. C. Turner; Othello (P.), from Mr. C. Turner; The Mikado (P.), from Mr. C. Turner; A. W. Tait (C.), from Messrs. H. Cannell & Sons; Daisy (P.), from Mr. J. T. West.

The following varieties, which have been under trial in the gardens, also received certificates of merit:—

Caesus vars.—Honor, Panthea, Juarez, Empress of India, A. W. Tait, and Mrs. Hawkins from Messrs. Keynes, Williams & Co.; Juarez from Mr. C. Turner; Mrs. Hawkins, Henry Patrick, Charming Bride, and Lady Kerrison from Mr. T. S. Ware.

Pompon vars.—Darkness, Brunette, Millie Wood, Fairy Tales, Whisper, Mdle. V. Facourt, Gem, Red Indian, The Khedive, Janet, Rosetta, Rosalie, Lady Blanche, E. F. Junker, White Aster, Fashion, Isabel, and Mabel from Messrs. Keynes, Williams, & Co.; Ernest, Isabel, Fanny Weiner, Anna Zachman, Dove, Princess Sophie Sofiela, Cupid, Lady Jane, Admiration, and E. F. Junker from Mr. C. Turner.

Single vars.—Miss Linaker, The Sport, Sunningdale White, Mr. Kennett, Alfonso, Lady Monckton, Cetewayo, Formosa from Messrs. J. Cheal & Sons; Florrie Fisher, Miss Henshaw, and Kate from Mr. T. S. Ware.

Bedding vars.—Yellow Pet, Marguerite Bruant, and Flora Macdonald from Mr. C. Turner.

Show vars.—Condor, J. B. Service, George Rawlings, Ovid, Mrs. Gladstone, Cyprus, Royalty, Primrose Dame, Leah, Goldfinder, Royal Queen, Diadem, Toison d'Or, Mrs. Glasscock, Statesman, Mrs. Harrison, and Pioneer from Mr. C. Turner.

Fancy vars.—Grand Sultan, Queen Mab, and General Gordon from Mr. C. Turner.

GRAPE CONFERENCE.

Certificates of merit were awarded to the following varieties, as shown in the different collections:—Black Monukka, from H. Balderson, Esq., and the Royal Horticultural Society; Canon Hall Muscat, from Mr. W. Roupell; Muscat of Alexandria, from Mr. G. Wythes; Muscat Hamburgh and Alnwick Seedling, from the Royal Horticultural Society; Gros Colman and Gros Maroc, from Mr. Hooking; Muscat of Alexandria, Muscat Champion, Alicante, and Black Hamburgh, from Mr. J. Loudon.

Certificates of merit were also accorded to Messrs. T. Rivers & Son, for a collection of Frontignan Grapes; to Mr. J. Wallis for a collection of Grapes. The silver-gilt cup for examples of packing Grapes for private use went to Mr. Dawes; and certificates of merit in the same class to Mr. J. Hudson, Mr. S. Castle, Mr. C. J. Waite, and Mr. Hookings.

Silver-gilt Banksian medals to Mr. W. Roupell for collection of Grizzly and Frontignan Grapes. Silver Banksian medals to Messrs. T. Rivers & Son, to Mr. St. Clair, to Messrs. Parrot Brothers, to Mr. Peter Kay, and to Mr. Sweet, for collections of Grapes.

HARDY FRUIT TREES.

FRUIT trees of nearly all kinds have been late in making their growth. The ravages of caterpillars and other pests early in spring retarded the growth of the trees, so much that many varieties of Apples are only now in active growth. The caterpillars and aphides had early in May taken possession of the trees to such an extent that the prospects of a crop of fruit seemed hopeless. They devoured the flowers before they expanded, and had curled themselves safely into the young shoots and leaves. We anticipated seeing the trees leafless in a short time, but fortunately succeeded in checking these pests beyond our expectations.

The wall trees were hand-picked, as well as many of the bush trees, and this proved the most satisfactory of the methods tried. It takes considerable time, which is its main objection, but it appears to be the only certain method of destroying caterpillars if neglected until the insects cause the leaves to curl round them. If the trees are syringed or sprayed liberally with hellebore powder and water when the insects are first hatched their destruction is certain. We used the powder at the rate of three 2-inch flower pots full to four gallons of water. Heavy rains soon clear the powder from the trees, and it is necessary to renew the application, for the caterpillars continue to hatch over a considerable period. This mixture is not so good as 8 lbs. of soft-soap, the same quantity of quassia chips, and tobacco paper, boiled together and then strained. This quantity will make 100 gallons.

The trees syringed with this were quickly freed from aphides, and the caterpillars soon turned yellow and died. One dressing of this solution cleared one flat of bush Apple trees that were very badly attacked. No doubt the majority of the eggs were hatched, or did so very soon after the application, and were consequently destroyed as soon as they commenced feeding. It appears to me feasible, that if this, or some similar mixture, that will stick to or dry upon the leaves, was applied before the pests established a footing, injury to the trees and the destruction of the crop of fruit would be averted. I have in view bush and pyramidal trees of moderate size only, standards and large examples are much more difficult to deal with. Merely spraying the trees may prove effectual if repeated at short intervals, but where the trees were thoroughly soaked the most complete destruction followed.

My object, however, is to call attention to the condition of the trees of the present time, and the treatment necessary to overcome as far as possible the evils of spring, and give them every chance of perfecting bold fruit buds for another year. It is a mistake to leave wood in the trees that is not really wanted for another season. Bush and pyramidal fruit trees in too many gardens are too crowded with branches, which exclude light and sunshine, and weak puny fruit spurs are the result. Fruit buds in this condition, even if the fruit sets, are often poorly formed, small, and inferior in quality at the end of the season. Trees crowded with branches may appear perfect examples of manipulation during winter when divested of foliage, much more so than trees that have their branches thinly disposed. Once the trees have been crowded with branches purposely to have shapely specimens, they are often disfigured by the removal of branches afterwards, but this is only of secondary importance. The primary object of all cultivators should be fruit of the first size and quality. This can be accomplished, and shapely formed trees into the bargain, if the knife is used carefully and judiciously from the first. It cannot be impressed too forcibly that every branch of bush and pyramidal trees should be so disposed that the sun has free access to every leaf and spur. If the main branches of the trees are thinly disposed, and the current season's growths are allowed to crowd the interior, the evil is as bad if not worse than crowding the trees with main branches.

Trees that are properly managed are pinched while the shoots are tender, so that a large amount of foliage has never to be removed at one time, the leader that is required for extension only being allowed to grow until the required length has been attained. All the growths that issue along the branches need not be left more than three inches in length when first stopped. This necessitates going over the trees again in August, and cutting back closely all growths that are made after the first pinching. Trees that are thin then devote all their energies to the development of the fruit and the perfection of spurs for another year, instead of wasting their energies on wood that is eventually to be cut away. Where the lateral growths are allowed to extend throughout the season not only is the fruit deprived of light and support, but the fruit spurs as well. Trees that are gone over twice during the season of growth are in a satisfactory condition until the fruit has been gathered. Further thinning is then necessary, and all wood that is not required should be cut clean out, so that light and air has free access to the fruit spurs. As soon as the fruit is gathered the trees should have their final pruning, except perhaps old trees that are crowded with spurs. Much may be done in thinning these, but the final thinning is best left until the foliage has fallen. All wood unneeded from late varieties is cut away as soon as the fruit has been cleared from the earlier fruiting varieties.

Early pruning is not only beneficial to the trees, but is much more pleasant now than during the cold short days of winter. This is not all. Early pruning allows of cleaning the fruit garden in autumn long before it could be done if pruning was delayed after the foliage had fallen. Trees that are crowded should have their main branches thinned directly the fruit is gathered. The distance the branches of bush and pyramid trees should be apart cannot be given here, for so much depends upon the growth of the tree and the size of its foliage. For instance, the branches of large foliage kinds, such as Warner's King, Blenheim Orange, Betty Geeson, and others, need to be further apart than such varieties as King of the Pippins, Kerry Pippin, and others of similar growth. Some judgment is needed in thinning out the main branches of a tree, and only the experienced can determine their proper distance after the foliage has fallen, and even then may easily be deceived. While the foliage is upon the trees there is no difficulty. Shoots that are needed for the extension of main branches may be left from 6 to 18 inches in length, according to their strength and degree of ripeness. A good many of ours were pinched when only 2 inches in length, and consequently are being cut close back. Lateral growths may be cut back to two eyes if needed for furnishing the branches eventually with spurs, if not they should be cut out. It is much better not to prune the trees after the first few years of planting than to allow them to become overcrowded with branches.

There are no reasons of any weight that can be adduced why pruning should not be completed simultaneously with the gathering of the fruit, or as soon after as possible. Raspberries may have the old canes removed as soon as the last fruit has been gathered, and all young canes cut away that are not wanted for bearing fruit the next season. The tops of the canes may be removed after the middle of September. Currants are better pruned during that month than two or three months later. The same may be said of Gooseberries, commencing early in September, and completing the operation as the fruit is gathered. Cherries and Plums may be finally pruned as the fruit is cleared from the trees, and Pears as well. Morello Cherries are frequently left until

winter, but they are better thinned as the fruit is removed, and thus give the wood every chance of ripening.

We have long since followed the practice of close pinching during summer, and final pruning during late summer and early autumn, with the best results. The thinner we have kept the trees, and the earlier they have been pruned after it is certain the shoots will not break again into growth, the bolder the fruit buds and finer the fruit. The thinner the trees in northern or shaded positions the more satisfactory they are likely to prove.—WM. BARDNEY.



EVENTS OF THE WEEK.—The chief horticultural event next week will be the Fruit Show in the Guildhall, London, held under the auspices of the Fruiterers' Company. In another paragraph full particulars are given concerning this Exhibition, which will be held on Monday, Tuesday, and Wednesday, October 6th, 7th, and 8th. The Crystal Palace annual Show of hardy fruits will be held on October 9th, 10th, and 11th, and a good display is expected, as numerous entries have already been received.

— **THE WEATHER.**—Fine weather has prevailed in London during the past week; little rain has fallen; the days have been bright and the nights clear, but only in a few low districts has slight frost been experienced. Tuesday night was rather stormy, but without rain. Yesterday the rain began to fall.

— **THE GUILDHALL (LONDON) FRUIT SHOW.**—We understand that the Exhibition of fruit, promoted by the Worshipful Company of Fruiterers, and which opens under Royal and distinguished patronage on Monday next, is likely to be as successful as could be expected during a season when the fruit crops are proverbially scant. The entries, we are informed, have exceeded the anticipated number, and produce will be staged from several of the best cultivators in the kingdom. It is thought, however, there will be ample space for all the collections, as in addition to the main building, which is larger than the vinery at Chiswick, in which Apple and Pear congresses have been held, the old Council Chamber and further rooms will be placed at the disposal of the Committee by the City authorities, who are most generously affording all possible facilities in promoting the object in view. The attendance will be very large and influential, as some thousands of tickets have been distributed amongst the Aldermen and Common Council, Stock Exchange, Lloyds', Society of Arts, City Companies, Bank Directors, the Royal Horticultural, Agricultural, and Botanic Societies, the Linnean Society, British Fruit Growers' Association, Crystal Palace Company, and various other corporations, who either are or ought to be interested in fruit culture in the kingdom. No charge is to be made for admission, and tickets can be had by applicants at the Guildhall on the second and third days of the Show. Sir James Whitehead, Bart., the Chairman of the Executive Committee, is working with great zeal, and is being well supported by his colleagues in completing the arrangements for what ought to be a noteworthy event in the fruit world. A. H. Smee, Esq., with Mr. O. C. T. Eagleton (the Clerk of the Company), and Mr. J. Wright are appointed Directors of the Show, and Mr. R. Dean as Manager. The Exhibition will be opened by the Lord Mayor in the afternoon of the first day, and will close at five o'clock, and not six, on the third day.

— **FINE CYCLAMENS.**—Mr. William Mowbray, Fulmer Gardens, Slough, sends us some very fine Cyclamen flowers with the following note:—"The blooms I think are good. The one with double row of petals appear to be a novelty; the plant has thrown up six blooms, and they are all exactly the same; also, the other blooms are showing similarly. Most of the plants are in 24-size pots, the plants 16 inches through the foliage, and will be a mass of bloom by the end of December. The seed was sown in the middle of October last and the plants have been in a cold pit all the summer." [We have seen several double Cyclamens, but the one alluded to is the finest that has come under our notice. The flower is 3½ inches across, and the corolla is divided into eleven broad segments, carmine at the base, shading to rosy purple. The flower stalk is 11½ inches long and very stout. The other varieties are also good, and the specimens bear the stamp of superior culture.]

— **POTASH FOR VINES.**—Messrs. Alexander Cross & Sons write in reference to our reply to "J. S.," on page 61, relative to potash for Vines, and state the manure they advertise contains an unusually large per-centage of potash, and think gardeners would do well to give it a trial.

— **THE UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.**—The annual dinner of the above Society takes place on October 23rd, at 5.30 P.M., at the Cannon Street Hotel. Mr. E. R. Cutler will preside. The Secretary is Mr. W. Collins, 9, Martindale Road, Balham, S.W.

— **MR. T. LAXTON** sends us flowers of **SWEET PEA CARMEN SYLVA**, a new variety with blue and rose-tinted flowers, but the specimens had suffered too much in transit by post to show their characters to the best advantage.

— **CHISWICK GARDENERS' ASSOCIATION.**—We are desired to state that the Committee of the above Association are organising a grand concert in aid of the Gardeners' Orphan Fund, to take place on October 29th next, in the Vestry Hall, Chiswick.

— **MANY** of your readers will regret to learn of the death of **MR. JAMES HOTHAM**, late fruit foreman to Earl Brownlow, Belton House, Grantham, where he has been for three and a half years. The deceased was a young man of promising abilities, was well known and highly esteemed. Deceased was interred at Nafferton, W. Driffield, Yorks, on September 20th.—A. M.

— **GARDENING APPOINTMENT.**—Mr. Charles Turner, late foreman at Old Warden Park, Biggleswade, has been appointed head gardener to J. B. Firth, Esq., Barningham Hall, Norfolk.

— **CORDON PLUM SUCKER OR SEEDLING—HOW TO TREAT.**—A Plum sucker or seedling has come up beside the wall of my garden—N.E. aspect. I removed the head, and it has well branched in cordon style on each side, the growths this year being about 2 feet long. I have been told I must graft it, but would like to know is that absolutely necessary to get fruit? Would some experienced correspondent say what treatment is most judicious to produce fruit? Would lifting and root-pruning and less rich soil than that of the vegetable garden be desirable, and if so, would November be the best time for this purpose? I should have said the tree is vigorously healthy, and about five years old.—W. J. MURPHY, *Clonmel*.

— **SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP, NOTTS, FOR LAST MONTH.**—56 feet above mean sea level. Mean temperature of month, 57.8°. Maximum on 5th, 77.7°; minimum on the 30th and 31st, 37.4°. Maximum in the sun on the 8th, 127.1°; minimum on the grass on the 31st, 28.7°. Mean temperature of the air at 9 A.M., 59.3°; mean temperature of soil 1 foot deep, 59.3°. Nights below 32°, in shade none, on grass two. Total duration of sunshine in month 142 hours, or 32 per cent. of possible duration. We had one sunless day. Total rainfall, 2.15 inches. Rain fell on fourteen days. Wind, average velocity, 8.5 miles per hour; velocity exceeded 400 on one day, and fell short of 100 miles on five days. Approximate averages for August:—Mean temperature, 60.2°. Sunshine, 149 hours. Rainfall, 2.52 inches. A cool month, without any really warm weather. The rainfall was below the average, but the last ten days were rather showery.—JOSEPH MALLENDER.

— **EXHIBITION POTATOES.**—A Birmingham gardener, Mr. Burden, is a good cultivator and exhibitor of vegetables, and in looking through his gardens recently he was moving out his crops of Potatoes, so that I had an opportunity of seeing what they are as croppers, and the following varieties were remarkably good and clean—viz., Sutton's Satisfaction—A main crop variety, a flat kidney, and an excellent cropper. Sutton's Abundance.—A cross betwixt Magnum Bonum and Fox's Seedling, both rounds and kidneys being produced as the type, a kidney not being fixed in the growth here. It is an excellent main crop, almost as late as Magnum Bonum. Windsor Castle.—A second early kidney, and a great cropper and short haulm; a first class variety, and so far disease resisting. Sutton's Noncuch.—A flat round main crop variety and excellent cropper, and of good quality and a first-rate cooking kind. Sutton's Matchless.—A second early round, some of kidney form; a very first-rate table variety of medium size, dwarf haulm, and a great cropper. In the same garden I noticed a very fine Pea, Sutton's Matchless Marrow, with ten peas in a pod, and exhibitors will be glad of such a variety.—W. D.

— WHEN paying a visit to PICTON COTTAGE, THAMES DITTON, the residence of C. F. Howell, Esq., I was much pleased to see this now popular vegetable the Tomato extremely well cultivated. The plants were in 12-inch pots, and the compost used at the time of potting being a mixture of light and heavy loam, and they were helped when fruiting by sprinkling a little of Thomson's Vine manure on the surface. There were in all three dozen pots, the size of the house being 20 feet by 14 feet, with a span roof; other plants, such as Pelargoniums, Fuchsias, Liliums, &c., being grown in the house as well, and scarcely any peat had been used. At the time of my visit (the middle of August) they were well worth going a long way to see, the plants all doing well, and carrying a heavy crop of fruit, some of the specimens being 1 lb. in weight, plenty of others fully $\frac{3}{4}$ lb. The varieties grown were Suttons' Reading Perfection and Waite's Glenhurst Favourite, with a few pots of Carter's Perfection, the two former being much alike, the distinction if any being in Waite's Glenhurst Favourite having slightly deeper fruit.

— ON again paying a visit a few days ago I found them still in a flourishing condition, the gardener (Mr. Kent) informing us that he should think at least 200 lbs. had been gathered during the season, a dish from which had easily secured premier honours at the late Show of the Ditton Horticultural Society, held in July last. In addition to the above it might be mentioned that Mr. Kent secured first honours for a very prettily arranged group of miscellaneous plants. The gardens at Picton Cottage are not extensive, but whatever is attempted is well grown and satisfactory to its popular owner (C. F. Howell, Esq.), who takes a great interest in his garden; and it is creditable to his gardener, Mr. J. Kent. Orchids are also well represented—Cattleyas, Odontoglossums, Cypripediums, and Dendrobiums especially in great variety.

— NEAR there are the beautiful grounds attached to MANOR HOUSE, Thames Ditton, the residence of Hannibal Speer, Esq., under the management of Mr. H. Farr, who was the winner of the bronze medal presented by the Royal Horticultural Society at the above Show for the largest aggregate amount of money prizes. One plant specially worthy of note at the time of my visit was a beautiful specimen of *Lilium auratum*. The stem came very much deformed, especially towards the top, and it was thought that the flowers would not come perfect, but contrary to all expectations, the buds all expanded into perfect flowers, and formed a sight once seen never to be forgotten, as there were no less than forty-three good sized flowers open at once, filling the conservatory with fragrance. The Chrysanthemums, of which about 200 are grown, looked well, and no doubt later Mr. Farr will have a grand display of bloom.—P.

— I HAVE forwarded to you a sample of selected PERFECTION TOMATOES as grown here, and shall be glad of your opinion of the same. They are not the largest we have grown this season, having gathered many fruits weighing upwards of a pound, one specially fine fruit weighing 22 ozs. Our plants are confined to single stems, and have a very limited root run, the majority of them growing in boxes of various lengths, but only a foot wide by 6 inches deep, the plants standing a foot asunder, and we have taken a heavy crop of fruit from them. We always use the brush to assist the setting in the earlier stages, and invariably secure a good set, but I find as we discontinue the use of the brush we secure but little addition to our crop as regards quantity, the plants devoting their strength to swelling the fruits which we have assisted them to set, and being generously treated to liquid manure and a sprinkling of fertiliser, they acquit themselves in a very satisfactory manner.—T. CROSSWELL, *Homewood Gardens, Eden Park, Beckenham*. —[Four magnificent fruits were received, weighing respectively 13 ozs., 15 ozs., 15½ ozs., and 19 ozs., a total of 62½ ozs., or an average of 15½ ozs. each. They were well formed, even, and handsome, such as are seldom seen.]

ORIGIN OF THE FLORISTS' DAHLIA.

THE opening paper at the Dahlia Conference at Chiswick on Tuesday was by Mr. Shirley Hibberd, the subject being "The Origin of the Florists' Dahlia." Instead of reading in the customary manner from written or printed copy, Mr. Hibberd entered upon a free extemporaneous discourse; and with the aid of a series of drawings was enabled to interest his auditors in a subject that appears not to offer many points of general interest.

He divided his subject into two parts, the historical and the biological. The earliest description of the Dahlia extant is in the "Treatise on the Animals and Plants of New Spain," by Francisco Hernandez, published at Madrid in 1615. From this time there was no more heard of the flower for 150 years. It was again heard of in 1787,

when Nicholas de Menonville was sent from France to Mexico to obtain, by any means, the cochineal insect and the plant on which it fed. This explorer reported having seen in the gardens great Asters on stems 6 feet high with leaves like those of the Elder tree, and this augmented the desire in Europe for the possession of the floral wonder. The desire was gratified in 1789, when a parcel of seeds was sent from Mexico city by Vincent Cervantez, to be grown by the Abbé Cavanilles, in the Botanic Garden at Madrid. Of these England secured a share through Lord Bute, who was at that time in Madrid, and secured a few, which he sent home to Lady Bute, who grew them in her greenhouse, so that in the year 1790 the living flowers of the Dahlia were actually seen in this country. But the nature of the plant being misunderstood, it was soon lost to cultivation; it was, in fact, killed by kindness, for the pet idea of that time was that all exotic plants required a high temperature and a stifling atmosphere.

The year that followed was the first in the proper history of the plant, for then Cavanilles, in his *Icones*, gave it a name as *Dahlia coccinea*, the generic name being a compliment to Andreas Dahl, author of a treatise on the Linnæan system of botany. This name was subsequently set aside by Professor Willdenow in favour of Georgina, in compliment to Professor Georgi of St. Petersburg; but in 1832 the original name was restored on the sole ground of priority, and from that time has been generally used.

The formation of the florists' Dahlia began in the year 1813, when Donkelaar, at the Botanical Gardens at Louvain, obtained a series of double flowers, which were freely distributed. But from about the year 1800 the French had been assiduously cultivating it, though but little was heard of their operations in this way, owing to the influence of politics in every department of public intelligence. But the advancement of the flower in French gardens was revealed when the Allies entered Paris in 1814, for the English amateurs found single and double varieties in profusion, and it seems that the credit for all this was due to Donkelaar, who had first persuaded the plant to display its variability, and had freely distributed his improved varieties. Thus the Dahlia came in with the French Revolution, and it attained to the dignity of a florists' flower concurrently with the downfall of Napoleon, who was the "child" of that revolution.

Turning to the biological history, the figures of *Dahlia coccinea* ("Botanical Magazine," t. 762) and of *Dahlia variabilis* ("B. M.," t. 1885) were contrasted with the flowers in the Exhibition to show that although the several forms of Dahlias were known eighty years ago, the interval had been one of continual progression, the earliest doubles being so unlike those of the present day that one might say that their relationship was botanical rather than floral. The progress of the flower in all the qualities that are valued and sought by the florists was continuous until about the year 1850, the golden time being from 1830 onwards, when the prices of the new varieties ranged from 20s. to 30s., and the Dahlia supported publications of its own, one of its ablest advocates being the "Dahlia Register." In those golden days the principal trade cultivators were Wheeler of Warminster, Brown of Slough, Heale of Calne, and Glenny of Isleworth. In one of his advertisements in the year 1836 Mr. Glenny announced that the selection he had made represented the best amongst 3000 seedlings. For some time after this date Mr. Charles Turner of Slough, and Mr. George Rawlings of Bethnal Green advertised their new varieties at 15s. each, but after 1850 there was a visible decline in the popularity of the flower. The years 1860 to 1870 was a dark time in the history of the Dahlia, but in 1870 the National Dahlia Society commenced operations, and accomplished a genuine revival, and this was the more gratifying as it was on the broad basis of recognising the single and the Cactus varieties that were then coming into favour, the first Cactus variety, Juarez, of recent times being shown by Mr. H. Cannell in 1872. Previous to this, however, the Cactus group has been prefigured in Brown's "Glow-worm," 1836, a portrait of which Mr. Hibberd presented to the meeting.

The Dahlia was described as the most variable flower known, and a detailed account was given of the changes that take place in the development of the single to the double flower. The dissection of the flower revealed the differences between the florets of the ray and the florets of the disk, not only as to outward form, but as to their relation with the sexual systems, one direct tendency of the doubling process being to sterilise the flower. Some very interesting particulars were given on the seeding of show Dahlias and on the limits of variation in this variable flower. Of the extent of its variability Mr. Hibberd was enabled to discourse the more freely when he announced his belief that all our Dahlias, save and except the South American Dahlia *imperialis*, are representatives of one species. Thus he fuses *frustranea* with *superflua*, and even *glabrata* he regards a miniature form of *variabilis*, which name for strictly technical purposes he considers should represent the one species of which the other reputed species are but geographical forms. His reasons for those views would occupy more space than we can afford for them, but as the full text of the discourse will appear in the Society's journal, those who are curious on this part of the subject have but to wait for the publication to satisfy their curiosity.

CLEMATIS STANLEYI.

THE engraving (fig. 35) has been prepared from a drawing made at Kew about a month ago, and faithfully represents a distinct and little known member of the genus Clematis. It cannot be claimed as a novelty for it has been known at least half a century, having been

found in Natal by a collector employed by Lord Derby, whose name it bears in the specific title, and not that of the modern African traveller, as some might suppose.

some genus, and deserves to bear the name of that nobleman Lord Derby, through whose liberal patronage of natural history the plant is made known to us. Its discoverer remarks that it forms a shrub



FIG. 35.—CLEMATIS STANLEYI.

The plant was figured in Hooker's "Icones Plantarum" in 1843, and accompanying the Latin description are the following remarks:—"This is, assuredly, the handsomest species of an extensive and hand-

(apparently several feet in height), everywhere clothed with silky tomentum, so as to have a good deal the appearance of the silky variety of the North American Anemone patens. The flowers are as large

as those of our Corn Poppy, and, judging from the dried specimens, purple."

Last year seeds were sent to Kew from the Transvaal, and this summer the plants raised have flowered both under glass and out of doors. It is a dwarf compact shrubby plant not exceeding 3 feet in height, and has flowers about 3 inches in diameter, varying in colour from a pale tint to purple. Flowers are produced freely, and with the elegantly divided foliage give the plant an attractive appearance. It has fleshy roots, and loses its stems annually.



THE LATE MR. WILLIAM HOLMES.

It was with very deep regret that I read in the *Journal* of 25th ult. the sad news of the death of Mr. Wm. Holmes. It is now six years since I made his acquaintance on the occasion of the annual show of the National Chrysanthemum Society in 1884, when I asked his advice in the organisation of the first show of the Hull Society, which advice he readily gave, and many times since have I had the pleasure of talking Chrysanthemum matters over with him and received the benefit of his experienced judgment.

Only a short ten months ago Mr. Holmes was in Hull on the occasion of the second provincial show of the N.C.S., and I feel that the following words, which appeared in the report of the Hull Society, may be fitly reproduced here, where they will be more widely read, as they bear testimony to the unvarying courtesy with which Mr. Holmes conducted the business of the N.C.S.

"The Committee take this opportunity of putting on record the fact that the whole of the negotiations between this Society and the National Chrysanthemum Society, in connection with the joint Show, were conducted throughout by the members of the Executive Committee of the National Chrysanthemum Society with the greatest liberality and fairness, and the readiness with which they adopted the actions of the Executive of the Local Society was most gratifying to the latter, leaving, in consequence, nothing but pleasant memories of the second Provincial Show of the Metropolitan Society."

Mr. Holmes may be said to have made the National Chrysanthemum Society what it is, and it is no disparagement to others to say that the Society which he loved so well will find their loss difficult to replace, the shows will not seem the same without his presence. The N.C.S. will doubtless wish to form some lasting memorial of their late Hon. Sec., and I would suggest that the affiliated societies be allowed to join such a movement. If a sufficient sum were subscribed it might be possible to institute a "Holmes' Memorial Prize."—R. FALCONER JAMESON, *Chairman Hull and East Riding Chrysanthemum Society*.

THE NATIONAL CHRYSANTHEMUM SOCIETY.

THE next two or three months will constitute an important and critical period in the history of the above Society. It is true the general programme for the Centenary Festival is prepared, and the preliminary arrangements are practically completed, but much will depend upon the actual execution of the details, and it will be impossible to devote too great a care and consideration to the work. Happily Miss Holmes, the sister of our late Secretary, has undertaken to continue for the present the duties she has for some time so well performed as assistant to her brother. Being so thoroughly conversant with all the details of the clerical portion of the secretarial work, this is a most valuable offer, and will be highly appreciated by all members of the Society. The Chairman of the Committee, Mr. R. Ballantine, who had been for years one of Mr. Holmes's most intimate friends, and who has assisted greatly in the past both by suggestions and taking a good share in the work, has also promised to devote as much time as he can spare from business to general supervision. This, with other ready and able help in the management and arrangement of the Show itself, will effectually remove any fear of a collapse, and this explanation of the position of affairs will no doubt be welcomed by many from whom I have had letters expressing concern as to the prospect of the exhibition and the Society.

It is felt by the majority of the late Mr. Holmes's friends that no better course could be adopted at present than to do their utmost to insure the success of his special project—the Centenary Festival. The least that can be done is for the officers and members of Committee to co-operate heartily with this object in view, and if petty dissensions and jealousies are suppressed, success will be insured. It was proposed that the November gathering should be taken advantage of to call a general meeting to discuss propositions for next year, and upon one of the last occasions I spent in the company of Mr. Holmes this matter was discussed at some length. He evidently thought as others have, that following such a season of activity there would be corresponding depression and a tendency to a decline in public interest unless fresh

projects were prepared. With the aid of the numerous affiliated societies something might be effected in this direction, and in any case no harm could be done by inviting suggestions at the conversazione it was intended to hold on the day the prizes are distributed.—LEWIS CASTLE.

CHRYSANTHEMUM BELLE PAULE.

IN "taking" the buds of this variety on strongly grown plants all the shoots which cluster about the bud should not be removed at once, as is usually done with other varieties, but one should be left to draw off the sap until the bud has thoroughly formed and is seen to be swelling. On strong plants many buds go blind, and I know of no other reason for their so doing than that this variety needs assistance in perfecting its buds in the manner described. The fact of weakly grown shoots setting their buds freely, as named by "G. P.," points to the reason for non-setting and the remedy here advised also.—E. M.

ASHES.

WHEN any part of an organised substance is reduced by thorough combustion there remains a fixed residue or ash. This contains several metallic and non-metallic elements. The most important of the former are:—Potassium, sodium, calcium, magnesium, aluminium, and iron; and of the latter the chief are chlorine, phosphorus, sulphur, silicon, and carbon. These are combined together in varied amount and form in plants, and are derived by the plants from the soil. The characteristic elements of the leaves differ from those of the fruit, therefore an examination of the ash of plants leads to important conclusions as to the most suitable manures to employ for enriching the soil.

Ashes as generally available for cultural purposes are but limited in quantity; the most abundant are coal ashes. These have some manurial as well as mechanical value. The manurial properties are confined to sulphate of lime and potash, and carbonate of lime unless sulphate of iron is admitted to have manurial value. Coal ashes also contain carbon, silica, alumina, and oxide of iron, carbon being of considerable importance. Coal ashes are usually recommended as most useful to heavy soils. When they contain many cinders they are peculiarly suitable for lightening them, the benefit being mostly mechanical, as the staple is rendered more open, therefore permeable by air and rain. Rough ashes should always be reserved for heavy soil, and the finer for light. It is a great mistake to act on the principle that ashes are not a useful application to light soils. Lime in any form is beneficial as a binder, though it may have a decomposing disintegrating effect on organic matter. That does not imply the uselessness or even impoverishing tendency of lime when applied to light soils. In any form lime has a strong affinity for water, and binding as the effect of lime is it must improve light soils, acting as an absorbent and retainer of moisture. When reduced to dust or white ash coal ashes may be used as a dressing to light soils to the extent of half an inch thickness, and form good manure for Peas, Beans, Potatoes, and an excellent dressing for grass. Rough ashes, however, do more harm than good to light soil, and on heavy soil they can hardly be applied in sufficient quantity to alter the staple, but it may be overdone. An inch thickness mixed with the top spit will effect wonders as to working clay soil, and the air the ashes admit must act beneficially. Coal ashes are also excellent as a medium wherewith to mix blood, night soil, cesspool cleanings, and similar substances, for which purpose they cannot be too fine and dry.

WOOD ASHES.—There is always a quantity of woody matter in gardens, the result of trimming hedges, pruning trees, &c., as well as rough weeds, all of which reduced to ash contain various substances more or less valuable as manure. They contain sulphates of potash and lime, chloride of sodium, carbonates of lime, potash, and magnesia, besides other constituents, the most important component being potash, which often amounts to one-half or more of the ashes. On the amount of available constituents depends the value of wood ashes as manure. Salts are removed from soil through cropping, and it is necessary to restore these to the soil, as the aggregate amount in a few years will so far impoverish the soil as to prevent profitable culture. The ashes of plants containing the elements required by the various crop plants they can scarcely be applied wrongly. It is found, however, that sulphates and carbonates of potash act similarly to sulphate and carbonate of lime on the texture of soil—viz., that they have a binding effect. That, however, may be due to the ashes containing lime having no connection with the potash; but by whatever agent it is effected the continued application of wood ashes to clay soils is found to be attended with small benefit, whereas their continued application to light soils improves their staple, augments their retentive power, and enhances their producing value.

In the limited quantity that wood ashes are procurable in this country as compared with the supplies where wood is used as fuel, there is little danger of any soil being other than benefited by

their application. There are two conditions which must not be overlooked—viz., in their burning. Bakeries or brick ovens reduce the wood to a perfect ash, or nearly so, a similar result attending the thorough combustion of woody or vegetable matter on a hard floor or earth, whereby the whole by “stirring up” is reduced to ash. This is a kind of the greatest value, and there is this about this ash—viz., it must be kept dry, but if left to get soaked with rain a semi-lye is formed, and the potash vanishes correspondingly with the saturation. It is very useful for dusting over Peas, seedling or young vegetable crops of all kinds in the morning or evening whilst their leaves are damp as a safeguard against slugs and birds, besides value as manure. It is, however, one of the best fertilisers for every description of crop. I have mostly a store of this substance, and whenever seeds are sown, whether on the flat or in drills, give the ground a good dusting before covering with soil. I do not think there is a crop of any kind grown in gardens to which I have not applied this form of wood ashes, and invariably with beneficial results. All plants like it, as might be expected, as all soils contain potash, lime, and soda, therefore enter into the construction of plants. Of course, elements may be in a soil without plants making use of them, but those are as essential to plants as the “staff of life” is to man. They are not delicacies, but their everyday necessities. For fruit trees they are invaluable. If farmers would take care of the ashes resulting from their wood fires, and scatter them about their orchards, the moss would disappear from the grass, and the fruit trees would outgrow their gum and canker, especially if the precaution were taken to keep the ashes dry and take care of the blood when hogs are slaughtered, which mixed with the ashes is perhaps the most powerful of all manures for fruit trees, with an equal quantity of superphosphate added, though it is first-rate without. Gardeners are requested to give it a trial on Vines. A good handful per square yard will serve the Vines better than a foot thickness of stable manure, and both substances are let waste or expend themselves on a luxurious growth of Nettles. Figs like it, and all fruits, applying it some little time in advance of growth, for what is passed into the tree will pass into the fruit, and the more they have the more chlorophyll they will store on condition that the foliage has full exposure to light and air, and is not prevented assimilating the food elements for lack of ventilation. The more potash in the fruit with corresponding lime and phosphorus the larger it will grow, and the characteristic malic, citric, and other acid will come, with pectose in due course, and the colour of Grapes will be as is the chlorophyll stored. A peck per square yard (30½ square yards) is a suitable application, distributing evenly, and the fresher the ashes are the better, or they must, as before stated, be kept dry; but even then they lose value through the affinity of lime for water, therefore keep as dry as possible.

There is another property of wood ashes which must not be overlooked—viz., their value for applying to over-rich soils. Some soils—they are not very common in gardens nowadays—have so much manure that they do not produce crops correspondingly, in fact they become sour and unprofitable, the crops clubbing, grubbing, mildewing, and doing everything bad. The soil also becomes cold. A dressing of wood ashes corrects the sourness—more, it supplies the essential elements needed by the plants to harden their cell wall, balance or counteract the flushing tendency of the organic matter, whereby the plants are given stamina and staying power; in a word, usefulness. Dust ashes are not so good, however, as those that are rough, containing more carbon—i.e., charcoal.

Coarse wood ashes are generally any garbage—coarse weeds, remnants of vegetable crop, with enough wood or clippings and pruning to ensure their combustion, a slow process, whereby there is a considerable amount of charred matter, wood being converted into charcoal of a sort. These ashes and charred refuse are valuable for applying to heavy soil, as they contain a considerable amount of silica and lime with lessened proportions of potash and soda, although they may contain more when the leaves of vegetables are consumed than is present in the ashes of thoroughly consumed wood, as twigs and leaves contain more potash and soda than wood, and less lime. This charred material may be used at double the quantity when there is not much earth mixed with or holding it before burning, but when there is much earth it may be used in four times the quantity of the fine ash with very beneficial results on stiff soils, and to light does good, only the rougher parts are best taken out by passing it through a half-inch sieve. In this state the ashes may be used on light soils in the same proportions as for heavy soil. I like to have a good heap of the ashes at hand, particularly when the soil is stiff, having it damp for covering seeds with after sowing. I use it for everything sown in the way of vegetables, covering those on the flat with a similar thickness the seeds would otherwise be of soil, and fill the drills level where those are drawn. It serves to keep vermin from the

germinating seeds and their underground stems, also from their stems above ground, as no predatory slug cares to travel over it, and insures immunity from weeds to a great extent, especially as regards drills. It entails some trouble, but it is of a kind that pays, at least I found it difficult to get anything upon a stiff soil before I took to this plan. There are other ashes, but I do not think gardeners are troubled with more than the two kinds mentioned, therefore they are passed.—G. ABBEY.



NOTES ON SOME NEW ROSES.

WE have had some fine new Roses sent out within the last three years, the majority of them of British raising, and they seem to increase not only in quantity but also in quality as time goes on. Two belonging to 1887, which ought to be remembered as the Mrs. John Laing year, are only now becoming known, and these are Germaine Caillot, H.P., and L'Idéale, N. The former is a very fine show Rose, but will never be extensively cultivated, as it is one of the worst of growers, of the dwarf robust type. A maiden plant makes a shoot of 6 or 7 inches, and then produces its fine bloom. What are you to do? If you cut it to show you must take very nearly the whole plant, and thus very much weaken it for the future; and if you leave it it will not make more than two or three weakly autumn shoots with poor flowers. The first bloom is very good, but is the game worth the candle?

In L'Idéale, N., we have a strong grower, quite capable of climbing a wall. I have been a little disappointed with the flowers, which seem to resent any rain; but if “caught right,” and especially if shown in a bunch or in company with W. A. Richardson, it is very attractive. It seems much more vigorous than its popular buttonhole rival, and I think is more likely to help it by contrast than to weaken it by rivalry.

The year 1888 was not strong in H.P.'s. Monsieur Trievor seems a good deal like Comtesse d'Oxford, but I have only seen a few blooms. Sir Rowland Hill is a lovely colour, most distinct, effective, and useful. I have not yet succeeded in getting really strong growth or large blooms from it, and it is weak in centre and a bad laster. A midland rosarian told me he had found it revert to Charles Lefebvre, but it has not done so with me. Ernest Metz, T., redeemed the year in the Tea classes; a fine large well-shaped, and lovely flower, a good grower withal, and I have been surprised to see it shown so seldom during the past season. It is sure to come to the fore as the stock increases.

I wish Messrs. Dickson had not sent out Lady Castlereagh, T. As seen with me it certainly spoils their most excellent record, generally coming with a green eye, and as flat as a pancake when it does not. 1889 was also stronger in Teas than in H.P.'s.

The two good French Roses of the year, Gustave Piganeau, a very large strong growing red H.P., and Augustine Guinoisseau, a nearly white La France, I have had no experience with, but I have had Messrs. Dickson's two H.P.'s. Of these, Lady Arthur Hill, a seedling from Beauty of Waltham, is of excellent quality and form; the colour is charming, and though I should have liked it a little larger it is as good in that respect as the seed parent. James Brownlow is quite big enough, and not so coarse as I expected from its parentage, Marquise de Castellane and Paul Neyron; the wood and foliage are very similar to the latter Rose, but it has been a very bad bloomer with me, the majority of the shoots coming blind.

Three very fine Tea Roses were sent out this year, of these Cleopatra is grand. I saw some magnificent blooms at Mr. B. Cant's in June, and feel confident that this Rose will make its mark. It cannot be called a vigorous grower, but it will “answer to treatment” as doctors say, and do best I expect as a standard. This and Ernest Metz will, I have no doubt, be reckoned among our best Teas. Mrs. James Wilson is a very pretty Tea with good and most distinct growth; the flowers are like pale, very delicate Marie Van Houtte in colour, with good pointed centres, and though not of the largest size it is quite good enough to show among other Teas.

Souvenir de S. A. Prince has well maintained its reputation in every way as the best white sport of Souvenir d'un Ami. I had one this year, at least a Souvenir d'un Ami of mine produced white flowers throughout the season, one of which I took up to the Crystal Palace to show to Mr. Prince, but they were not quite pure in colour.

This year, 1890, two Roses from Messrs. Dickson seem likely to be heard of in future. My plants of these varieties have not bloomed, but I saw one flower of Jeannie Dickson at Birmingham, and believe it to be very good, and I heartily hope that T. W. Girdlestone will prove worthy of the name it bears.

And 1891 will surely be a noteworthy year; there are the three Roses shown at the Crystal Palace—Salamander, Mrs. Paul and Captain Hayward—on which I have no further criticisms to offer; Bruce Findlay at Manchester, Mrs. Arthur Wilson from Madame Luizet, and, above all, Margaret Dickson at Birmingham. Its parentage simply describes the latter Rose, a cross between Lady Mary Fitzwilliam and

Merveille de Lyon, and that is just what it looks like. A very happy thought, Messrs. Dickson, and what is more, a very happy result; a grand broad white Rose with the point of Lady Mary in the centre of the cup of Merveille, just where it was wanted. It certainly looks as if this was going to be our best white H.P., at all events for show purposes.

To look even further, Mr. B. Cant has kindly sent me some specimens of a sport from Madame Falcot, which he is testing. It seems a decided improvement upon the original; stouter, fuller, and larger. One at least of the blooms sent was quite good enough in centre, fulness, and shape for "the likes o' me" to show in a Tea class. If Mr. Cant decides to send this out I think it may be fully relied on. "D., Deal," has remarked, in giving lists of new French Roses, that to a certain extent we have to trust at first to the reputation gained by the raisers as to how their Roses have turned out and answered their descriptions in other years. Mr. B. Cant has sent out one Rose, Prince Arthur, and it will be remembered, I think, that he originally did not announce it as a show Rose at all, yet it has turned out to be one of no mean quality.

I have also been favoured by Messrs. Harkness with a specimen of their striped sport of Heinrich Schultheis. It was a poor bloom in itself, sent only to show the colour; there was a fair specimen, I hear, among their Roses at Tibshelf, and they inform me that they have had it really fine and good. Now, again, when a comparative stranger tells us he has had such a Rose fine and good, we naturally think to ourselves what is his ideal and knowledge of what is a good and fine Rose? but of course such an inquiry is unnecessary in this case, for if Messrs. Harkness do not know what a fine Rose is, who does? But I confess I do not like striped or parti-coloured Roses, they look to me tinselly, meretricious, clown-like, bizarre among self-coloured blooms, like the lady who appeared in the park the other day with sleeves, &c., of different colours. The tints of this sport are very much like those of the old so-called York-and-Lancaster, and the flower is, therefore, at least brighter and more cheerful than Pride of Reigate, which, in my private opinion, is sufficient to spoil the appearance of any stand; but taste, as Mr. Squeers said of "Natur," "is a rum thing," and it is wise to keep to the old rule—*De gustibus non disputandum*.—W. R. RAILLEM.



FRUIT FORCING.

PINES.—To maintain the sturdy healthful appearance of young plants free ventilation is necessary, the plants being afforded ample space, maintaining the bottom heat about the roots at 80°, watering the plants whenever they require it, employing weak liquid manure always, and avoiding the use of the syringe too frequently, merely damping the paths morning and afternoon daily will suffice. Fire heat must be resorted to to maintain a night temperature of 60° to 65°. Newly potted plants should have a bottom heat of 90° to 95°, with a view to the roots speedily penetrating the soil. Recently started suckers should, as soon as the roots are plentiful, be raised near the glass, it being essential that those intended to be wintered in small pots be brought on gradually.

When the suckers started this autumn are rooted pot them without delay, draining the pots well. Employ the fibry part of turfy loam, and do not tear it up too fine, but use it in lumps proportionate to the size of the pots. The strongest plants may be transferred to the fruiting pots at once, the size of the pots being proportionate to the robustness of the varieties. Jamaicas do not require large pots, 9 or 10 inches are quite large enough, as they go too much to leaf when more pot room is given them. Queens do well in 10 or 11-inch pots, Smooth-leaved Cayennes are accommodated in 11-inch pots, or 12-inch pots at largest, and Providence, of which it is desirable to grow some on account of its fine appearance, do well in 12 or 13-inch pots, which will afford fruit of the largest size, the cultural treatment being good. To get fine fruit the plants must be given plenty of space, and be kept well up to the light so as to form a sturdy thoroughly solidified growth and well developed base. Where smaller plants and fruit are required pots an inch or two less in diameter will answer. Plants not of a size fit for transferring to the largest pots can be shifted into 8-inch pots, in which they may be kept until spring, and then be transferred to a larger size. Fruiting plants should have a night temperature of 70°, 80° to 90° during the day, closing at 85°.

CUCUMBERS.—The autumn fruiterers must have every attention, affording weak liquid manure whenever water is required. Syringe only on bright afternoons at closing time, which should be soon after midday so as to command a good sun heat. Pinch out the growing point one or two joints beyond the fruit, examining the plants at least once, better twice, a week for that purpose, retaining no more foliage than can have full exposure to light. Remove all staminate and surplus pistillate blossoms, and pinch off tendrils early. Earth up the roots as the plants advance in growth from time to time, and take care that the soil, also water or liquid manure, is given at the same temperature as the bed. Pot the seedlings raised at the beginning of September for

winter fruiting directly they are large enough, not allowing them to become stunted, plunging the pots in bottom heat until the plants are established, then raise them well up to the light, keeping near the glass. Maintain a temperature of 70° at night, 75° by day, with an advance from sun heat of 10° to 15°. Where fermenting materials are used for bottom heat they must be in course of preparation for forming the beds. For producing fruit in January onward through the spring months a sowing should be made at once, the plants being kept sturdy by keeping near the glass.

Plants in dung-heated frames or pits will continue to afford good fruit for some time, only the linings are renewed as required, the foliage kept rather thin, all bad leaves removed, exhausted growths being cut away, and the shoots stopped to one joint beyond the show of fruit. No more water should be given than to secure healthy moisture for the roots, discontinuing syringing or damping overhead. If mildew appear dust with flowers of sulphur, and arrest canker by dusting with quicklime. Afford the protection of mats over the lights on cold nights.

CHERRIES.—These are not seen under glass to anything like the extent they deserve. They succeed admirably in any light well ventilated structures without heat; but they force readily only they are not hurried in the early stages. They may be grown in pots or planted out in bush or pyramid form, and they succeed admirably trained to trellises. It is essential to success in forcing that the roof lights be moveable, as the Cherry is liable to over-maturity of its buds when subjected to early forcing in consecutive years. The best time to plant trees under glass is when the leaves begin to fall. The most eligible are those trained four to six years against walls, and subjected to annual or biennial lifting. Trees from the open answer well, only they have been lifted so as to move safely, and are free from gum. Trees that have been grown in cool houses are the best of all; but they can seldom be had in trained trees, and that is no drawback, as they succeed very well planted out in bush or pyramid form, or they can be grown in pots, whereby the house is liberated for Chrysanthemums in autumn. The Cherry succeeds best outdoors in a silicious soil, but indoors it requires a more retentive soil. Good turfy loam, inclining to be strong rather than light, four parts, one part each old mortar rubbish and road scrapings thoroughly incorporated, form a suitable compost, the border being 24 inches deep over 9 inches of rubble secured with a layer of old mortar rubbish, and about 6 feet wide is ample for trellis trees. The very finest varieties are Early Rivers, Empress Eugénie, May Duke, Black Tartarian, and Large Black Bigarreau. Of the light coloured varieties, Early Jaboulay, Governor Wood, and Elton are excellent. In planting, the soil should be made firm, a good watering given, and the surface mulched with an inch of short but rather fresh manure. The lights having been removed some time from houses that are regularly forced they need not be replaced for a month or six weeks, the old surface soil being removed without injury to the roots and replaced with fresh compost, that above-mentioned answering with the addition of a fourth of manure. A handful of steamed bonemeal or ground coprolites may be given per square yard. Trees in pots required to be shifted into larger pots should be attended to at once, and those not required to be so treated should be turned out of the pots, removing a few inches of soil from the base, cutting back the roots, and supply fresh loam with a sprinkling of half-inch bones, good drainage being provided. The surface soil should be removed, supplying the above compost, adding a fourth of decayed manure. The soil should be made firm. Afford a good watering, and place the trees where they can have plenty of air. If stood outdoors they should be plunged over the rims of the pots.

STRAWBERRIES IN POTS.—Autumn fruiterers afford acceptable dishes of fruit, their bright appearance affording a pleasing variety at dessert. All the varieties forced are not good autumn fruiterers, but the early forcers, as La Grosse Sucrée, Vicomtesse Hericart de Thury, and Sir Harry, are most suitable through their quality being higher than the larger fruited varieties. Plants that have been forced in spring, shaken out, repotted, and grown on are excellent for autumn and early winter fruiting, or if planted out and duly attended to they can be lifted at the end of September, potted, and placed in a frame. After the fruit begins to swell they should be encouraged with weak liquid manure, guano water being suitable, and where the plants are weak they may have an occasional dose of nitrate of soda, half-ounce to the gallon of water. Early autumn fruiterers with the fruit approaching maturity should be placed in frames with abundant ventilation, which will assist the fruit to ripen, improving its colour and quality considerably. Any autumn fruiterers not required to fruit for some time yet may be retarded by placing them on a north border, assigning them plenty of space on a hard bottom.

The earliest intended for early forcing should now be selected, taking with the most promising crowns, well developed, and plumped, giving them plenty of space, so that they will become well matured in their growths, and before heavy rains place them in frames plunged to the rims of the pots in ashes, and well up to the glass, so that with that perfectly clean they will be assured plenty of light, and air must be afforded abundantly by keeping the lights tilted in rainy weather and withdrawn when the weather is mild and fair. The plants must not lack water at the roots. A loose surface for Strawberries in pots prevents the soil leaving the sides of the pots, and admits of the water passing equally through the ball and moistening it thoroughly. A little dried horse droppings or cowdung rubbed through a half-inch sieve applied to the surface will keep all right there. Remove all runners as they appear, also weeds, and do not allow the plants to suffer through insufficient supplies of water. The plants should have plenty of space

for the full exposure of the foliage to light and air, which is essential to sturdy growth and plump well developed crowns. Late and weakly plants may be assisted with weak liquid manure, but stimulants must not be given strong plants or it may cause them to push the flower buds, which if only partial splits up the crowns into a number of parts derogatory to a good show of trusses when placed in heat.

THE FLOWER GARDEN.

Carnations and Picotees.—A showery season has been favourable to the rooting of the layers generally, and abundance of strong plants ought now to be available. Newly rooted plants of choice varieties, as a rule, are potted and stored in cold pits and dry frames, though whether in many cases they would not do better planted out is a moot point. Supposing the layers are plentiful, both plans might well be resorted to, a failure being thereby guarded against, and it may be the foundation of a greater success than usual be laid. Those to be potted should be separated from the parent plants with a moderate amount of soil about the roots, and be given well drained 3-inch, or rather larger sizes if need be, and a compost of turfy loam, a little old Mushroom bed manure, and plenty of sharp sand. Pot rather firmly, water, and set in frames near to the glass. During the winter they ought to have abundance of light and air, and on no account to be subjected to much fire heat, mats and other coverings being the best safeguards against severe frosts.

Planting out Carnations.—No time should be lost in getting either seedlings or plants, raised from cuttings or by layering, into their flowering quarters. A damp or low position does not suit them. They thrive best in slightly raised beds, to the soil of which has been freely added a good thickness of sandy loam and a little short sweet manure. These beds ought really to have been prepared for some time previous to planting, in order that the soil should be well sweetened and pulverised. Nor should planting be attempted in wet weather, as it is of importance that the soil be well pressed about the roots without causing it to bind badly. Slightly raised beds 6 feet wide may hold five rows of plants put out about 12 inches apart. A sharp look-out must be kept for slugs, frequently stirring among the plants serving to keep these down, and if the frosts loosen the plants, as they often do, then must the soil be as often pressed about the roots again. Much of this upheaving may, however, be prevented by mulching the beds with either leaf soil, spent tan, or old Mushroom bed manure.

Pinks.—These also should be planted out in beds directly they are sufficiently well rooted to bear removal with a trowel. Raised beds may well be formed for trees, the soil being prepared much as advised in the case of Carnations. A distance of 9 inches apart is ample. New plantations are by far the most satisfactory, the very old beds producing a larger number of flowers perhaps, but of a very inferior description. They do not fill up so rapidly as do Carnations, and a bed may be said to be at its best when about three years old. If no steps have been taken to strike a number of cuttings for planting out now, old plants may be pulled to pieces, and the divisions, whether furnished with roots or not, be deeply dibbled out into well prepared soil. All should be sunk well up to the young leaves, the plants rarely doing well if any portion of the old stems are exposed.

Pansies.—Seedlings grow and flower the most freely, and if the plants are large enough to put out into raised beds before wintry weather sets in the chances are a grand display will be had early next season. Plants raised from either seed sown or cuttings inserted at this late date ought to remain under glass till the spring, and these will afford an early summer display. Pansy cuttings strike very freely, and now is a good time to insert them, these being selected from young flowerless shoots, and otherwise treated similarly to what will be advised in the case of Violas.

Bedding Violas.—These have done remarkably well this season, plenty of moisture being what they stand most in need of during the hot weather. Of late years this beautiful class of bedding plants have been enriched by the addition of several charming varieties, and seeing how easily many hundreds can be wintered with very little protection they ought to be even more extensively grown than they now are. The simplest way of raising and wintering the requisite stock is to prepare garden frames for their reception. If these are shallow they may be set on an old hotbed, or a bed may be formed of exhausted heating materials, no bottom heat whatever being either required or desirable. Some rough soil should be placed in the bottom, or enough to bring the 5 inches of sifted sandy soil placed on the top of it well up to the glass. Deep frames can be set on bricks or flower pots at each corner, a few barrowloads of old heating material being placed firmly in the bottom, and then rough and fine soil on the top, finishing off in this and the other ease with a surfacing of sand. The best cuttings are those just springing from the centres of the old plants, and failing these the tops of old growths will do nearly as well. Shorten to about 3 inches in length, and insert them that distance apart each way all over the bed. A watering should be given, the lights put on, kept shaded in bright weather, and close for some time, abundance of air being given after they have commenced to form roots. A very little protection will suffice to preserve them from severe frosts.

Calceolarias.—These again have done very good service this season, and abundance of good cuttings are to be had. The firmest or most short-jointed flowerless shoots ought to be selected for making into cuttings, the soft undergrowth being discarded as much as possible. Cut just below the third joint, and trim off the lowest pair of leaves. In most other respects Calceolarias ought to be treated very similarly to Violas, no bottom heat being given them. Not being so hardy they will

require more protection during the winter. If a few dozen plants only are needed these may either be struck and wintered in handlights or in boxes kept in cold frames. Calceolaria amplexicaulis is alike the most delicate and the most beautiful variety of all for bedding purposes, but even this must not be unduly coddled, fire heat, unless a little only is turned on in cold weather, being most injurious to this class of plants. Calceolaria cuttings may be put in any time before December, but if long delayed severe frosts might spoil them.

KITCHEN GARDEN.

ONIONS SPROUTING.—As we anticipated, the Onions not being well matured this season many of those drawn up about a month ago are sprouting again in the open shed where they were spread out to dry. It is chiefly those with thick necks that are doing this, and all the growths should be broken off them, and they should be the first used. Do not store them in a warm place, but keep them as cool as possible. On wet days the whole of the Onions may be examined. Remove the loose necks and skin, and store the sound bulbs in an airy loft for winter and spring use.

SPRING CABBAGE.—These have grown well since they were planted in their permanent quarters. The first planted are now ready for earthing. Some think there is no advantage in this operation, but it keeps the plants firm, and prevents their shaking about in the wind, which they otherwise do when the heads become heavy. They are also more hardy and robust in winter if the roots are growing in a firm soil, and before earthing tread round each plant until the soil is as firm as a road. This we have frequently proved is a sure way of securing compact plants, which are always the most desirable.

LATE KIDNEY BEANS.—Runners were unusually slow in podding in summer, but they have been uncommonly prolific since. Some late rows that are beginning to form pods will prove useful in October and November if they escape frost. Those that have been bearing all the season are of little use for a late supply. Late Dwarf Beans in the open that are about to flower must have frames and glass lights placed over as many of them as can be protected. Place the lights over them every night and when it is wet, but remove them on fine days. If the plants are crowded they will hold too much moisture amongst the leaves to fruit well, and some of the plants should be thinned to avoid crowding. Where Kidney Beans are desired at Christmas a quantity of seed of Ne Plus Ultra should be sown in small pots at once. Place them in a cold frame, let them remain there until they are ready for transferring into larger pots, and then place them into a warmer pit or house where the atmosphere is not too close.

YOUNG POTATOES IN WINTER.—It is surprising that those who devote much attention to the production of choice vegetables in and out of season do not grow Potatoes more generally for a supply at Christmas. Last October we made up a hotbed to hold a dozen lights or frames, placed soil into them, planted early Potatoes as if it was the spring crop, and we had many choice dishes at midwinter. The position must be sheltered and sunny, and the bed and frames should stand at a sharp angle to catch the sun and escape damp. Sharpe's Victor has succeeded well with us in autumn.

SALADING.—The Lettuce plants for the winter supply are now ready for transplanting. Some of them should be placed into frames at a distance of 6 inches apart, but do not protect them until it is necessary. They will soon establish themselves in good soil, and they can readily be protected from frost. At the same time plant a quantity at the bottom of the garden wall, or anywhere that shelter is afforded. Endive may be treated in the same way, and in mild localities a quantity may be planted in the open garden. Winter Radishes of the China Rose and Black Spanish types now showing should be thinned to 2 inches apart. Mustard and cress will not grow in the open now, and must be sown under protection.

WINTER SPINACH.—We never had this more promising. It is a useful winter vegetable, but those who have the plants crowded and without thinning will find it suffer much more from frost than when it is thinned in good time, so that each plant stands clear of the other. These will furnish more useful leaves than a crowd of plants.

LATE SOWN CARROTS.—In common with many others, when our Carrot crop sown in April was badly attacked with the grub in July the prospect of having our usual supply of Carrots in winter was not bright, but by adopting our usual practice of sowing again when a crop is failing we have now a large quantity of clean healthy young Carrots. They are not so large as the April roots would have been, but they are of a most useful size, and we are seriously considering whether in years to come it would not be better to be less anxious to sow the main crop in April or May. July sown crops rarely suffer from grubs, and there is no doubt as to their gaining a useful size by October. This matter is worth the consideration of growers.

VACANT GROUND.—Lifting Potatoes and clearing of Peas and other crops will leave some vacant quarters. These are often allowed to remain with the old stems and roots in the ground until midwinter or later, but this is a bad plan, and the best way is to clear all refuse off or burn it on the ground, and dig it roughly immediately afterwards. This gives the garden a good appearance, and is also most beneficial to the soil.

PLANT HOUSES.

Gladiolus The Bride.—Plants that flowered during the early part of June in the greenhouse and have since been standing outside should be repotted before they start into growth. If this is done at once the old soil can be shaken from the corms, and then placed thickly together in

5-inch pots, and covered with about half an inch of soil. After potting they may stand outside or be placed in cold frames, where they will soon start into growth. If placed outside plunge the pots in ashes, and just cover the surface of the soil with the same material that has been passed through a fine sieve.

Lilium candidum.—Bulbs that were potted a short time ago and have started into growth should be placed in cold frames; they will be perfectly safe in this position until it is necessary to force them. When the flower spikes appear they should have greenhouse treatment; nothing is gained by hurrying them. As their flower stems lengthen a sharp look out must be kept for aphides.

Lilium Harrisii.—These may still be potted, and placed in cold frames until they start into growth. Be careful that the soil is in an intermediate state of moisture. When placed in frames fill in between the pots, and cover the rim to prevent watering with cocoanut-fibre refuse. Directly they show through the plunging material they should be lifted out at once, and if required in flower early it will be necessary to place them where they will be safe from frost. They delight in standing on a moist base, and must not be hurried before the flowers are formed, when a temperature of 60° will do no harm. Until they reach this stage a temperature of 50° should not be exceeded.

Epacris.—Remove these from frames to give room for Cinerarias, Calceolarias, and other plants. Select for Epacris a light position, where they can have abundance of ventilation. Stand the pots on ashes or some other moisture-holding material. Be careful that they do not become dry at their roots, or the material upon which they stand. Syringe the plants lightly on fine days in the morning and afternoon.

Solanums.—The earliest plants will have a number of coloured berries upon them, and should be placed in cold frames or in the greenhouse at once. Whichever position is selected the base should be a moist one, and the plants liberally supplied with water. Soot water is very beneficial, and will impart to the foliage a fine dark hue. Later plants in pots that have set a good number of berries should be placed under cover. Lift those that are planted out, and place them for a week behind a north wall, give a good soaking of water, and syringe several times daily until they commence rooting afresh, when they may be placed in frames.

Callas.—Where these are grown in pots, and if required in bloom as early as possible, place them at once in the greenhouse or any other light airy structure. Small plants in 3-inch pots that are well rooted should be placed into 6-inch. Lift all that are outside, and place them in pots according to their strength. No harm will result from reducing their roots considerably provided the roots are preserved. If treated the same as advised for Solanums they will soon be sufficiently established in their pots for any position. In case of frost protect them with tiffany.

Salvias.—Those that have been grown in pots may be placed into 10-inch if large plants are desired. Do not pinch them again. Lift those that have been planted out, and place them in various sized pots. They will soon become established if given the treatment advised for Callas.

Bouvardias.—Do not leave longer in cold frames; remove them to a light house where the temperature at night can be prevented falling below 55°. Give the plants weak stimulants every time they need water. Large trusses will result, and be produced in succession for a long time.

Begonias.—Plants that are still in frames should be placed in a light house where a free circulation of air can be given by day, and where the night temperature will not fall below 50°. Keep the atmosphere as dry as possible. Tubercous Begonias that have done flowering may be allowed to go to rest; dry then gradually, or the tubers are very liable to decay. Seedlings and those raised from cuttings that have attained fair size and have commenced flowering will continue to do so in the conservatory for a long time. Later plants should be given gentle heat, and they will soon commence flowering and yield suitable blooms for cutting for some weeks. Start into growth a few plants that have rested of weltoniensis and others of a similar nature. Repot young plants that need more root room.

Azaleas.—These are frequently at this season outside and in various positions in consequence of their different stages of growth. No time should be lost in training those that have been closely tied in; the foliage will then turn to the light before winter. Arrange the whole of these in their winter quarters. Examine them for thrips, and if any are found wash the plants in a solution of tobacco water, 1 oz. of softsoap to the gallon, and a piece of common washing soda the size of a Cob Nut.

TRANSPLANTING EVERGREENS.—Conifers and various evergreen shrubs can be moved safely at this time of the year, and for several reasons we prefer to do as much as possible of the work of transplanting now, forming new shrubberies and re-arranging the old ones. At this time of year it often happens more men can well be spared from other work than is the case in the spring, and, moreover, the state of the ground favours the operations. When a tree or shrub is carefully transplanted thus early in the autumn they have time to partially recover from the check, and very frequently form fresh root fibre before cold weather stops all active growth. If placed in a good position, and always, if possible, in rather better soil than they were previously rooting in, they rarely experience a great check, and form good growth the following season. We find that not enough rain has fallen to well moisten the soil near the stems of the trees, and much

sheltered soil is still quite dry a little way below the surface. No tree or shrub ought to be moved in a dry state at the roots. A basin should be formed, opening out the soil near the stems in extent according to the size of the ball to be removed, and after this has been filled with water a few times the soil will be found well moistened to a good depth below. Never drag a tree or shrub out of its position. A good trench ought always to be opened out with forks around it, and the tree well undermined, nor should a very large ball of soil about the roots be aimed at, these very frequently breaking away in large pieces. Pick away with a fork all unoccupied surface soil, and flatten the ball underneath while it yet rests on a small pedestal of subsoil. It can then be safely slipped on to a strong board or barrow, and carried to a fresh site, and which ought previously to have been well and deeply dug. Mix leaf soil or spent manure with the surface soil, and plant rather above the level.—W. I.

THE BEE-KEEPER.

APIARIAN NOTES.

HOME.

AFTER two months' absence I am home again, but how glad would I be could I say that Leadhills was my home. It is truly a country for bees during June, July, August, and September, and what a resort for health and pleasure amongst the hills and dales. The welcome home was agreeable; heaps of literature and letters awaited me, and from some of my correspondence I must beg a little indulgence.

After being shut up for forty-five hours the bees reached home safely. A partial covering to keep off the rain for a few days until the manipulations are past will be given, and a thorough covering will be supplied later on. To prevent robbing our strong stocks have not more than 1 inch of doorway, no ventilation.

WEIGHING THE STOCKS.

I have not had time yet to weigh all my stocks, of which with one exception, a nucleus, all are good, and have during the month of September risen in weight about 50 lbs. This will give a small surplus from each hive, but the exact quantity will not be known until further on. I have, however, selected two, my best Carniolian and the second best Punic, and I am pleased to say that the greatest weight has been gathered by the Punic. They are my two heaviest hives, the second best one scoring 9 lbs. more than my best Carniolian. The other I have not weighed yet. The nett weights of the two contents of these hives are 70 lbs. "A Hallamshire Bee-keeper," in a private letter, states, "That unlike other breeds the pure Punic bees are the best honey gatherers." Can he help us to secure the number of queens that may be wanted? The test they have been put to is a fair one, and will be remembered. The Punic were mere nuclei in the spring of the present year, so that although first at the last were really last at the first.

The temper of these bees appears to be very mild, and although I have not as yet seen nor tasted their honey, I will not be long until I do, as I have it for the taking. They were the first, if not the only ones, that secreted wax for comb building in the super, which the untoward season alone prevented. I have other remarks to make, which must be held over till a future occasion.

VENTILATION.

It is well known that since I made public my method of ventilation, both British and Continental bee-keepers have taken the hint, but some of them, recommending a method most injurious to bees, by advising a very wide doorway, which creates a severe draught, and brings on dysentery on the bees, the cause being attributed to honey. When hives are ventilated in any manner so as to expose the contents of the hive to the direct action of the air, the honey is liable to ferment, and the odour at all times attract robber bees. This, together with a wide doorway, causes the bees inside to cluster closely, and the robber bees have an easy task to enter without opposition, and despoil the hive of its valuable contents. A narrow entrance, with an insensible under and upward ventilation, is how to winter bees successfully. I often give my

bees the benefit of the draughty ventilation from below during very warm weather, but I immediately close it on the first approach of a lower temperature, and very often every evening.

At two miles distance from where my bees stood at the moors are fifty hives which have had their ventilators open all the time, with the result that there is not a single hive with sufficient bees to stand the winter and come well out in the spring. Nearly every hive has a bin of dead bees in front, equal to an ordinary swarm. The particles of wax, and the odour of the hives, passes through and attracts stranger bees, which keep up a constant raid on the inmates and contents of the hive. These hives have done little good, and will require two or three to be united to be of any value. My own hives are a contrast, not one but I could form two colonies from. I trust that the hint will deter others from falling into a similar error.

QUEENS' CAGES.

I have observed "A Hallamshire Bee-keeper's" remarks (pages 169-70), but I am not sure whether I understand their meaning. I remember some time since seeing in a contemporary a statement to the effect that Mr. Benton was the originator of these cages, and in another I observed an editor also claiming them. As I had sent queens many years previous to Benton's time in similar cages I simply mentioned the fact. The centrebit was not invented to make queens' cages, but is useful in many ways.

I have before me a standard work on bees of American production containing a vast amount of matter as original that appeared first in the pages of this Journal, and British publications are not free from the same practice, which does not injure much, but is unfair.

The article at page 260 is no doubt meant as a burlesque, and to be amusing, but it entirely loses its humour when other than facts are stated. Few will agree with him that the bee is either "fussy or disagreeable," neither is it an "impostor," nor does it assume to "teach," nor can they be taught, nor will they enter flowers "six times over." We do not expect people to work themselves to death, although bees to a certain extent do so, but many of their actions are worthy of emulation. We have never known bees poison themselves, though some insects destroy them when at work on certain plants. It would be better for us all if our laws were as stringent as the bees are in defence of their property. Bees will find out their hive, weather permitting, although it be moved many yards. Do not many of us store up more than is necessary for our wants? A bee's life is full of pleasures, even when robbed of their last drop of honey they seem full of happiness. Drones are not at a discount so long as they appear to be useful.

BEES AND POPPIES.

Will you kindly say in your next week's Journal whether Poppies grown near bee hives will have any injurious effect on the bees, or if there is any honey in the Poppy which the bees can extract and poison themselves? A solution of this question will be gratefully received.—G. H.

Poppies have only one injurious effect upon bees when growing near their hives. If right in front of them they seem to annoy them, and the bees attack the scarlet flowers, tearing the petals. Syrians are the most determined in this respect. Poppies afford much pollen in the morning before Mignonette, and are specially useful for the bringing forward of nuclei; but they do not yield much if any honey, but certainly they are not injurious to bees.

I prefer a good strain of French Poppies for variety and bees. I have grown for the past forty years a white Poppy, tipped scarlet on the outer edges of their petals, which always came true until this year. They have shown a decided departure from the true type to that of the French, or nearly so, with one exception. The flower is preserved as in the original, but the foliage is that of the common Poppy, and lacks the bristles of the original. I have a pretty cross between it and another sort which comes true, being higher in the colour than the mother; but none suits the bees so well as the French type.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

A. M. C. Jongkindt, Coninck Dedemsvaart, near Zwolle, Netherlands.—*Trade List of Plants*.
G. G. Rumsey, Wrotham, Kent.—*Catalogue of Roses*.
E. Webb & Son, Wordsley, Stourbridge.—*Catalogue of Seed Corn*, 1890-91.
Hooper & Co., Maida Vale.—*Bulb Catalogue*, 1890.
Daniels Bros., Norwich.—*Dutch Flower Roots (illustrated)*, 1890.
Yokohama Gardeners' Association, Nakomura, Yokohama, Japan.—*Japanese Trees, Shrubs, and Plants*.



* * * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Colonial Appointments (Inquirer).—We should advise you to write to the Curator of the Royal Gardens, Kew, stating your objects, and it would probably be desirable for you to spend a short time in the establishment named.

Transplanting Peach Trees (F. S.).—The trees will move quite safely if care is taken to lift them without damage, preserving all the roots practicable, and if possible keeping a ball. That, however, is not very important only the fibres are preserved, and there is no delay in planting after lifting. The transference is best made when the leaves have for the most part fallen. Cut away any long bare roots, and pare the ends smooth that are damaged in taking up the trees. Make the soil firm about the roots and give a good watering, mulching the surface as far as the roots extend with a little rather fresh manure. With protection for the blossom there is no reason why the trees should not succeed admirably against a south wall.

Lord Palmerston Peach (J. F.).—The fine fruit you sent was not in condition when it arrived for testing the quality of the variety. It was overripe, and also much bruised. We have tasted fruits of this variety that were very good indeed, and others the reverse. It seems variable, and is more affected by soil and other influences than are some other varieties. It appears to succeed well with you, and we are glad to learn gives satisfaction. You can obtain all requisite particulars on sending specimens to the Fruit Committee of the Royal Horticultural Society by writing to Mr. A. F. Barron, R.H.S. Gardens, Chiswick, London, W. We think the next meeting is on the 14th inst. If the Peach buds are swelling, the ties may be "eased" now.

Thickening a Grass Lawn (J. W.).—Give a good dressing of well decayed manure or rich compost in autumn, disposing it evenly, and in spring rake off the rough portions, sowing early in April grass seeds of the finest mixture at the rate of half a pound per square rod, or more if the grass be thin. Rake over lightly, and roll well. This will cause the grass to thicken. Lose, therefore, no opportunity of rolling it well in moist weather. If you have some short manure or compost at hand it may be applied now, raking it well in, and then sow the grass seeds, rolling well afterwards. The present grass will shelter the tender seedlings, and they will fill up better than if the sowing were deferred until spring.

Tomatoes Diseased (Old Subscriber).—We have neither received the samples nor the letter to which you allude as having sent some time since. The fruit now before us is affected with the disease *Peronospora infestans*. It is most difficult to eradicate, but can either be prevented or the attack minimised when the plants are grown in glass structures heated artificially. A dry buoyant atmosphere can then be maintained and the air impregnated with sulphur fumes from the hot-water pipes. The disease occurs when there is an excess of moisture in the soil and atmosphere, and the opposite conditions are what you must endeavour to produce. Keep the soil so dry that the leaves turn flaccid before giving water, and the atmosphere of the house as dry as you can make it by heating the pipes (if your house is heated) and judicious ventilation. You give no particulars of the treatment to which the plants have been subjected, or we might possibly have indicated more definitely the cause of the attack.

Shortening Growths of Black Hamburgh Vine (F. I.).—It is a capital plan to cut back the laterals after the Grapes are cut, or when growth ceases, so as to develop the buds, and by admitting more

might assist the wood to mature. The old rods should be cut away close to and even with the main rods. There will not be any bleeding, and the earlier it is done the less likelihood is there of its taking place when the Vine starts into growth next year. You are quite right as to the cropping of Vines and other fruit trees not being overdone when fresh growth issues from stopping, laterals and sub-laterals being produced concurrently with the fruit swelling and perfecting. The wood being ripe, air may be admitted constantly day and night, but it is not desirable to do this until the wood is thoroughly brown and hard. An occasional syringing will benefit the foliage by cleansing it of dust, but it will hardly be necessary at this time of year. Dryness is most desirable.

Verbena Cuttings Damping (Inquirer).—The coloured fungus is one of the moulds assumed by fungologists to be only an early stage of fungi, more complex in structure when matured, and have the power of producing spores that when lying in fluid which contains sufficient food, cause a ferment. This they may obtain in the soil used for inserting the cuttings, which, containing leaf soil, may afford a fermentable substance; but the fungus exists on plants the leaves of which remain damp. The germs exist in the soil, and then it is not possible to prevent their growth in damp places when they find a suitable host. We can only suggest that the cuttings be inserted in pure sand (drift, *i.e.*, road sand, river, or sea sand), using no soil whatever in striking them, but keeping the sand thoroughly moist. The sand used hitherto probably contains carthy matter, but it is not unlikely the fungoid germs are on the cuttings when inserted, and then germinate through the damp being regular and prolonged. Have you tried a fresh stock? It often proves satisfactory both in growth and freedom from disease.

Forming Privet Hedge (J. W.).—Dig or trench the ground fully a yard wide, mixing with the soil some well-decayed manure. Plant in November bushy specimens of the evergreen variety with good roots 6 inches apart. Cut it down in spring to within 6 inches of the ground when the buds begin swelling, trimming in the sides. This will cause the plants to branch freely and become dense at the base. Trim the sides a little in August; in fact, cut them back so as to form a base of not more than 9 to 12 inches width, slightly tapering upwards, and in September cut off the top, the mere tops only, so as to form an even height. This will be determined by the lowest parts, which will probably be 18 to 24 inches high. The following year the hedge will advance rapidly, and may be treated as in the previous year, when a hedge will be had about a yard high, but it is well not to let it grow too tall without heading, otherwise it will be weak. About a foot height is sufficient to gain in each year after the first up to a height of 3 feet, and then 6 inches gain each year until it is of the height required. A hedge may be had quicker by planting 2 to 3 feet bushy plants, merely trimming in their irregular side and top growths.

Apples for Planting (Balbriggan).—If you can not only remove a foot in depth of the clay, but lay a drain along the bottom of the trench, which may be 4 feet wide (with outlet into a deeper drain), and over this place 6 inches of rubble or broken stones, to be covered with turf before filling in with good soil, you will have an excellent station for Apples; but if you cannot provide the drainage as suggested, merely digging out the clay would be practically making a tank for the water to collect in, and rather than do that it would be better to let the clay alone, plant in ameliorated soil, the trees to stand on slight mounds with the roots covered about 4 inches deep, and the soil over them mulched with rather open manure, not a wet pasty mass. A mulching of this kind will be quite as useful in summer as in winter, as if the good soil near the surface is kept moist the roots will ramify in it, but if it gets dry in the summer they will strike down to the clay in search of moisture. We have excellent Apples grown in the manner described in soil over a bed of clay. You say you have room for "eleven trees, and require half to be dessert and half culinary." We will try to oblige you with 5½ each, or an equivalent. For your exposed but not cold position the following may be suitable:—Dessert: Devonshire Quarrenden, Worcester Pearmain, King of the Pippins (Golden Winter Pearmain), Cox's Orange Pippin, and Wyken Pippin. Culinary: Lord Grosvenor, Keswick Codlin, Ecklinville, Warner's King, and Bramley's Seedling. To make up the required number plant Duchess of Oldenburg, and use the fruit either for dessert or culinary purposes as you prefer.

Manuring Flower Borders (J. W.).—They are best manured in autumn, as the manurial matter is assimilated and absorbed by the soil ready for being taken up by the roots when fresh growth takes place, whereby a good growth is assured and the plants flower more profusely. Nightsoil and soot are powerful manures, and should not be used excessively. Soot is more speedy in its action, and should not be supplied until it is required by the plants, applying it to flower borders in spring during moist weather when the plants are commencing growth. It is good against predatory vermin or slugs, &c., and may be given at the rate of a peck per rod (30½ square yards), distributing it evenly on the surface, and unless thrown on the plants in excessive quantity will not injure them. It should, however, be kept from those with hairy leaves. During March or early April is a good time to apply soot, repeating in June, or it may be given during summer in liquid form to any plants requiring stimulation, a tablespoonful to a gallon of water is sufficient. Being rather difficult to mix it should be formed into a paste with sufficient water, and then it mixes readily with water. Nightsoil mixed with dry fine ashes or dry soil may be applied at the rate of a bushel per rod for general dressings, the ashes or soil used not being more than an equal quantity of the night soil; but when the

soil is poor it may be applied at double the rate named, and should be pointed in. This should be done in autumn or some time in advance of growth in the plants. It will be rendered very powerful by adding urine to form a paste and dry wood ashes to form it into a dry powder. This kept in a dry place is little inferior to guano, and can be applied to any crop with material benefit. A good handful per square yard is a sufficient dressing to apply at once, and before cropping or a little in advance of the plants requiring assistance in accelerating their growth or enlarging their parts.

Indian Figs—Cochineal (T. G.).—You are quite right in saying the fruit of *Opuntia vulgaris* is so called, but it is not that species that supports the cochineal insect. *O. vulgaris* has been naturalised in the south of Europe, where, in Sicily, it has spread over expanses of volcanic sands and ashes where not a particle of vegetable soil exists. The fruit is about the size of a Fig, and red on the inside. It is very much relished by some, but varies in quality according to the climate in which it is produced. The Sicilians grow it extensively, and esteem it one of their most valuable esculents. It forms an important article of diet with the inhabitants of that island during three months of the year, though strangers generally consider it insipid. In the countries where it grows the Prickly Pear is, on account of its rapid growth, much used for the formation of fences round lands and dwellings; and the quickness with which it grows, and its long stout spines, speedily render it such a formidable enclosure that neither man nor beast can penetrate it. *O. Tuna* also makes strong fences, and when the island of St. Christopher was divided between the English and the French three rows of the Tuna were planted by common consent between the boundaries. Sir J. E. Smith states that the long and slender stamens of the flower are very irritable, and that if a quill or feather is thrust through them, in the space of two or three seconds they begin to lie down gently on one side, and in a short time become recumbent at the bottom of the flower. The fruit yields a rich carmine pigment, which is used at Naples as a water-colour. *O. cochinillifera*, or Nopal, is the plant on which the cochineal insect feeds and breeds. It is in Mexico where the production of cochineal is carried on to the greatest extent, but it is also produced in the Canary Isles and in Java. The insect is the *Coccus cacti*. A number of the females are preserved during the rainy season. After the rains have ceased they are distributed over the plants, and having deposited their eggs speedily die. The eggs are hatched by the heat of the sun, and give rise to innumerable insects, the males of which are only in the proportion of one to a hundred or two hundred females, and being provided with wings they move about and fecundate the latter. After this period the females which before moved about attach themselves to the plant, and increase rapidly in size, so that in the end their legs, antennæ, and proboscis are scarcely discernible, and they appear more like excrescences on the plant than distinct animated beings. They are now gathered by scraping them off by means of a blunt knife, or brushing them off with a quill, a feather, a squirrel's or deer's tail, a few being left to continue the race. They are destroyed by dipping them in hot water, or by the heat of a stove. In the former case they are afterwards dried in the sun.

Maggot in Wood (E. G. G.).—The caterpillar in the wood is the larva of the goat moth (*Cossus ligniperda*). As is stated in Miss Ormerod's "Manual of Injurious Insects," the moth lays her eggs in crevices in the bark commonly at the lowest part of the tree, and the caterpillars which hatch from these eggs feed at first in the bark, or between the bark and the wood; as they grow stronger they eat their way into the wood, and form chambers and galleries of various size and width, some as large as a man's finger. The caterpillar has the power of exuding an oily fluid from its mouth with a remarkably pungent goat-like smell, whence the name of the moth. Infested trees may often be known by this disagreeable smell, and sometimes by heaps of dirt or wood-dust thrown out by the caterpillars lying below the entrance of their burrows. During the winter they lie quiet, otherwise they feed for a period of three years, and when ready to change form cocoons of little bits of wood roughly spun together just inside the entrance of their burrows, in which they turn to a reddish-brown chrysalis. Shortly before the moth is ready to emerge the chrysalis forces itself partly through the cocoon, where the empty case remains sticking out from the tree, and is a useful guide as to infested timber. The moths are heavy and sluggish, and may be taken easily by hand as they rest quietly during the day on the bark of the tree out of which they hatched. The caterpillars sometimes leave the trees, and may be found straying about in May and in the autumn, and in such case they should always be destroyed; but generally (as above mentioned) they change to chrysalids at the entrance of their burrows, and where trees are known to be infested these reddish chrysalids should be looked for during June or early in July. Any mixture that can be laid on the tree, so as to prevent the moth laying her eggs on the bark is useful, and a thick coating of clay and cowdung has been found to answer well. The caterpillars may be diminished in number by crushing them in their holes with thick strong wire; a glance at the state of the end of the wire when it is withdrawn from the hole will show whether the caterpillar has been reached or not. If the direction of the hole admits of the caterpillar being dragged out by a finer wire doubled at the end, so as to form a kind of hook, this plan is also serviceable. Paraffin injected by a sharp-nozzled syringe with as much force as possible into the holes where the caterpillars are working is a good remedy, and any fluid poisonous to the caterpillar, or which would make the wood of its hole poisonous or distasteful to it for food, would be serviceable, such as tobacco water or a solution of softsoap. The fumes of sulphur blown into the hole are also effective.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*P. W. H.*).—1, Emperor Alexander; 2, Probably Beauty of Kent; 3, Smart's Prince Arthur. (*G. B.*).—1, Dumelow's Seedling; 2, Blenheim Pippin; 3, Dutch Codlin; 4, Cox's Orange Pippin; 5, Trumpington; 6, Keswick Codlin. (*J. Johnson*).—Maltster. (*J. Armstrong*).—1, Alfriston; 2, Not known; 3, Blenheim Pippin; 4, Striped Beefin. (*J. P.*).—Cannot be recognised, probably local varieties. (*J. J. C.*).—1, Dumelow's Seedling; 3, Manks Codlin; 4, Lady's Finger; 5, Lord Suffield; 6, Braddick's Nonpareil.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens should be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. —(*Rugby*).—1 and 5, insufficient; 2, *Adiantum concinnum latum*; 3, *Dieffenbachia Sequine*; 4, *Crinum amabile*; 6, *Neottopteris australasica*. (*A. W.*).—Box quite crushed, we can only recognise 2, *Escallonia macrantha*; 4, *Primula obconica*. (*M. G. W.*).—1, *Helianthus decapetalus*; 2, *Agrostemma coronaria*; 3, *Echinops ruthenicus*; 4, *Helianthus multiflorus flore-pleno*; 5, *Solidago Virga-aurea*. (*W. E. T.*).—The shrub is *Pyrus japonica*, also known as *Cydonia japonica*, the Japanese Quince, well known in gardens. (*W. T.*).—The flower sent was crushed beyond all recognition, and your description will not enable us to determine the other one mentioned. (*East Lincolnshire*).—A light coloured variety of *Centaurea moschata*.

COVENT GARDEN MARKET.—OCTOBER 1ST.

MARKET quiet, with no alteration.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, $\frac{1}{2}$ sieve	2	6	to	6	0	Lemons, case	35	0	to 45 0
„ Nova Scotia and						Melons, each	1	0	2 0
„ Canada, per barrel	0	0			0 0	Oranges, per 100 ..	4	0	9 0
„ Tasmanian, p. case	0	0			0 0	Peaches, dozen ..	1	0	8 0
Grapes, per lb.	0	9			3 0	Plums, $\frac{1}{2}$ sieve ..	4	0	9 0
Kentish Filberts, 100 lbs.	0	0			50 0	St. Michael Pines, each..	2	0	6 0
„ Cobs	0	0			50 0	Strawberries, per lb.	0	0	0 0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.	
Artichokes, dozen	0	0	to	0	0	Mushrooms, punnet ..	1	6	to 2	0
Asparagus, bundle	0	0	0	0	0	Mustard & Cress, punnet	0	2	0	0
Beans, Kidney, per lb. ..	0	3	0	0	0	Onions, bushel. . . .	3	0	4	0
Beet, Red, dozen	1	0	0	0	0	Parsley, dozen bunches	2	0	3	0
Brussels Sprouts, $\frac{1}{2}$ sieve	0	0	0	0	0	Parsnips, dozen	1	0	0	0
Cabbage, dozen	1	6	0	0	0	Potatoes, per cwt. ..	3	0	4	0
Carrots, bunch	0	4	0	0	0	" New, per lb. ..	0	0	0	0
Cauliflowers, dozen.. ..	2	0	4	0	0	Rhubarb, bundle	0	2	0	0
Celery, bundle	1	0	1	3	0	Salsafy, bundle	1	0	1	6
Coleworts, doz. bunches	2	0	4	0	0	Scorzonera, bundle ..	1	6	0	0
Cucumbers, doz.	2	0	3	6	0	Seakale, per bkt. ..	0	0	0	0
Endive, dozen	1	0	0	0	0	Shallots, per lb. ..	0	3	0	0
Herbs, bunch	0	2	0	0	0	Spinach, bushel	1	0	2	0
Leeks, bunch	0	2	0	0	0	Tomatoes, per lb. ..	0	3	0	6
Lettuce, dozen	0	9	1	3	0	Turnips, bunch	0	0	0	4

CUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.		
Arum Lilies, 12 blooms ..	2	0	to	4	0	Lilium, various, 12 blms.	1	0	to	2	0
Asters, per bunch, French	1	0	1	6		" longiflorum, 12 blms.	2	0	4	0	
" English, 12 bunchs.	3	0	6	0		Marguerites, 12 bunches	2	0	6	0	
Bouvardias, bunch ..	0	6	1	0		Maidenhair Fern, dozen					
Carnations, 12 bunches ..	4	0	6	0		bunches	4	0	9	0	
" 12 blooms ..	1	0	2	0		Mignonette, 12 bunches..	1	0	3	0	
Calceolaria, doz. bunches	0	0	0	0		Pansies, dozen bunches ..	1	0	2	0	
Chrysanthemum, 12 blms.	1	0	3	0		Pelargoniums, 12 trusses	0	9	1	0	
" 12 bunches	4	0	12	0		" scarlet, 12 bunchs	3	0	6	0	
Cornflower, doz. bunches	1	6	3	0		Pinks (various), doz. behs.	3	0	6	0	
Dahlias, dozen bunches..	2	0	4	0		Primula (double) 12 sprays	0	6	1	0	
Eschscholtzia, 12 bunches	0	0	0	0		Roses (indoor), dozen ..	0	6	1	6	
Eucharis, dozen ..	2	0	4	0		" Moss (Eng.), 12 beh.	0	0	0	0	
Forget-me-not, doz. bunch.	1	6	4	0		" Red (Eng.), 12 beh.	2	0	6	0	
Gardenias, 12 blooms ..	2	0	4	0		" Red, 12 blooms ..	1	0	2	0	
Gladiolus, 12 bunches ..	4	0	9	0		" Tea, white, dozen..	0	6	2	0	
Gypsophila, per bunch ..	0	6	1	0		" Yellow	2	0	4	0	
Iris, various, dozen bunchs.	0	0	0	0		Stocks, dozen bunches ..	0	0	0	0	
Lapageria, 12 blooms ..	2	0	4	0		Sweet Peas, 12 bunches	1	6	3	0	
Lavender, dozen bunches	3	0	5	0		Tuberose, 12 blooms ..	0	3	0	9	

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.		
Aralia Sieboldi, dozen ..	6	0	to	12	0	Geraniums Scarlet, p. doz.	2	0	to	6	0
Arbor Vitæ (golden) doz.	6	0		8	0	Heliotrope, per doz. ..	4	0		6	0
Asters, dozen pots ..	3	0		6	0	Hydrangea, doz. pots ..	9	0		18	0
Calceolaria, per doz. ..	4	0		6	0	Lilium lancifolium, doz.	9	0		18	0
Chrysanthemum, per doz.	6	0		24	0	„ longiflorum, doz.	12	0		24	0
Climbing Plants, various, dozen pots	4	0		9	0	Lily of the Valley, 12 pots	0	0		0	0
Dracæna terminalis, doz.	24	0		42	0	Lobelia, per doz.	0	0		0	0
„ viridis, dozen ..	12	0		24	0	Marguerite Daisy, dozen	6	0		12	0
Erica, Cavendishi, per pt.	0	0		0	0	Mignonette, per dozen ..	4	0		6	0
„ various, dozen ..	12	0		18	0	Musk, per dozen	0	0		0	0
Euonymus, var., dozen ..	6	0		18	0	Myrtles, dozen	6	0		12	0
Evergreens, in var., dozen	6	0		24	0	Nasturtiums, dozen pots	0	0		0	0
Ferns, in variety, dozen..	4	0		18	0	Palms, in var., each.. ..	2	6		21	0
Ficus elastica, each..	1	6		7	0	Pelargoniums, per doz. ..	6	0		12	0
Foliage plants, var., each	2	0		10	0	Rhodanthe, per dozen ..	4	0		6	0
Fuchsia, per doz. ..	4	0		9	0	Stocks, per doz.	0	0		0	0
Geraniums, Ivy, per doz.	0	0		0	0	Tropæolums, various, per dozen	0	0		0	0



MICHAELMAS THOUGHTS.

"FARMS are still to be had worth the money," were the words with which a leading East Anglian farmer recently wound up his report of the condition of agriculture in his district. He was right, but he was equally correct in saying that there are vacant farms which are not worth having rent free, or, we may add, he would have taken them, for he has ample capital, and has taken several off-hand farms at very low rents during the last few years, just because they could be had "worth the money," which is an East Anglian equivalent for a profitable investment. The reason why there are such no-man's farms is simply because the land is heavy, foul, wet, and poor, and the outlay involved in its improvement would be so great as to preclude the possibility of a fair profit upon outlay for a year or two. But the case is not hopeless even for such land. Let the landlord lay it down to grass, not necessarily of the finer pasture, but rather with a few of the stronger growing Grasses, with some White Clover. After the indispensable preliminary draining, let him enrich it by the judicious use of chemical manures, and so clothe it with nutritious herbage, that he will literally make the desert smile, and he will then have plenty of applicants for the hire of it.

Corn growing even in the eastern counties is gradually being contracted, while there is a proportionate extension of the area of land under crops for live stock. Flocks increase faster than herds there, for the simple reason that wet or breeding flocks have long been established on corn farms, and their enlargement under present high prices was a foregone conclusion—a simple case of cause and effect. But home-bred herds were quite the exception, and their establishment and extension involves so heavy an outlay that it is necessarily slow. A change that is gradual is generally as sound as it is durable. Bitterly does many a farmer regret this Michaelmas that he was induced by low prices to grub his Hops now that prices have risen so much that Hops will be about the best thing in agriculture this year. It seldom, if ever, answers to rush to extremes, and any radical change in crops must be approached with caution. To continue the cultivation of Hops at the prices of a year or two ago meant ruin and nothing else to the man whose land was entirely under Hops, but even he should not have forgotten the old Kent axiom, "Years eight set things straight," or in other words, the fluctuation of Hop prices over a period of eight years have always been in favour of the grower, who must, of course, possess sufficient means to bear the brunt of a monetary fall in the value of his produce.

In this, as in everything else, one sees the wisdom of not trusting entirely to one crop. The men who have passed best through the agricultural depression are precisely those who have kept steadily to a system of well-balanced cropping, with such enlargements or curtailments of certain crops as could be managed easily and quickly. Landlords in the eastern counties have suffered more than those in other districts just because their farms had got entirely out of proportion when corn-growing answered so well. The land was practically entirely arable; tenants knew nothing, or comparatively nothing, of pasture farming, and so rents came down with the price of corn to a ruinous extent. We have given 50 per cent. as the average rent reduction in East Anglia, but we know farms with every advantage of proximity to roads, town, and rail that have come down from a rent of 50s. to 15s. per acre, simply because tenants could not be had at a higher rent. Only a week or two ago a Worcestershire landlord was complaining to us that land on his estate once worth 70s. an acre was now let at 40s.

Well, the loss of income is serious both east and west; but the western landlords have still the best of it.

A radical change, which must do good, is the rearing of home bred cattle by farmers generally. Cattle dealers have shot their rubbish into British markets quite long enough to open the eyes of the most easy-going farmer. The Board of Agriculture is doing its utmost to stamp out infectious disease among cattle, and to prevent its re-introduction by foreign cattle. Let us do our part by the avoidance of imported cattle, and the rearing more and more really well-bred stock. Is it not the action of a fool to go and purchase store beasts upon which one is morally certain no profit is possible? Yet this has been done again and again, and what is even still more strange, the simpletons discuss results as though they deserved the sympathy of their friends.

There are farms to be let this Michaelmas, as there always will be, but there is nothing like a glut of farms in the market or on offer in any market. Wide circulation has been given to a report of the increasing number of vacant farms in Sussex and Kent, but the statement was erroneous and misleading. Hop farms are on offer, and with Hops at from £15 to £20 per cwt. they ought not to go begging. The statement that two East Kent growers in partnership expect to realise between £60,000 and £70,000 for their Hops of this season, and another puts his profits at £12,000, is certainly tempting, but pray do not forget the lessons of the past few years, and avoid putting all your eggs into one basket.

WORK ON THE HOME FARM.

Most favourable has the weather been for autumn cultivation, and we never had the land in better order by the end of September. There has been some rain, but not enough to hinder work at all, and the clearing and sowing has gone on without a hitch. The last field we put a plough into had a lot of Charlock in bloom, but there were no other weeds, and this last turn of the ploughs has left it quite ready for sowing. The new layers are all remarkably full of growth, the Clovers being nearly a foot in height, so freely have they grown since the corn was carted. This abundance of food has induced us to break up a field of Sainfoin which was becoming very foul, but which had we wanted it would have given us some useful fodder next year. There was a lot of Dock plants in it which were got up by hand before the ploughing was done, and we shall have very little trouble with the other weeds. We must have clean land at any price, and prefer a little extra outlay for labour than the serious exhaustion of the soil by weeds. This Sainfoin had been eaten off by sheep in folds, so the land is in good heart, and will come to hand quickly for other crops.

Root crops have improved wonderfully all through September, and we shall soon have the Mangolds in clamp now, each clamp being close by a hard road to facilitate carting when the roots are required for use. As we are so forward with our work generally, and carting is so light now, enough Mangold will be carted and clamped near the yards in readiness for use early in the new year. Carrots are taken at once to the root house, as we shall begin using them for dairy cows as soon as they come off the grass into the yards. We have also an ample supply of fine Cabbages quite ready for use, and they are an excellent addition to our cow dietary in moderation a little later on. Green Maize is now being used freely for all yard stock, but there has been no carting of it upon pasture for store cattle this autumn, so abundant has been the feed. We do not like to venture far into October before using up this most useful auxiliary green crop, as we have so often had it browned by early frosts. Cattle will go on eating it even then, but it cannot be so good for them. Anyone having an empty silo may turn any large surplus of green Maize to account by passing it through the chaff cutter and storing it in the silo for winter or spring use.

FISH-KEEPING.

A POND without fish is like a garden without flowers. Any piece of water, no matter how it is situated, is rendered desolate in aspect when it is barren of finny forms. It is choked with vegetable and minute animal life, but offers a rich feeding ground for the fish it lacks. But this state of things may be easily remedied by the exercise of a little trouble and the expenditure of a comparatively small sum, for at short notice fish can be imported and deposited in the pond. Its size and physical conditions must decide the question as to the number and species of fish desirable for introduction, and having satisfied oneself on the subject the fish chosen can be obtained of a pisciculturist and planted at any time without difficulty. Sometimes the conditions of the pond are so far satisfactory that trout can be introduced, and provided sporting strains are selected, the owner may depend upon obtaining a certain amount of fishing, sufficient, perhaps, to enable him to practise in

his spare moments. Thus, from the insignificant position which the pond previously occupied it rises to a high degree of importance and value, while it becomes an ornamental adjunct to the garden or grounds in which it is situated. It would be thought that all owners of ponds or waters were desirous of stocking them with fish, and yet I know many to whom the idea has never occurred, or if so, it has not been entertained because of doubts as to carrying it out successfully. No such doubts need exist in the face of the fact that any waters, no matter what may be their physical characteristics, provided they are not polluted, can be stocked through the art of fish culture with one species of fish or another. It is needful, however, that advice be gained previous to planting the fish in order to ascertain the species best suited to the water, and the nature of the food contained in it.

Being desirous of gaining some practical information on the subject of stocking ponds, I journeyed to Malvern Wells to seek an interview with Mr. Burgess at the Midland Counties Fish Culture Establishment, the well known fish breeding station. Here I saw the fish at home in their various habitats, and noted the wonderful rate of growth which they achieved therein through an excellent and perfect system of propagation. On one hand were the buildings wherein the eggs of the fishes were hatched, and on the other the nurseries where they were reared. But I came not with the intention of diving deeply into the process of hatching and nursing the fish, as that would have taken too long, while after all I should not, probably, have comprehended all the phases of the art so ably carried out and explained by Mr. Burgess, but I desired more particularly to ascertain the method by which ponds were stocked and planted. It so happened that whilst I was there a consignment of live trout was being got ready for despatch to Cornwall, and I therefore had an opportunity of witnessing the operations connected with it. In the first place the fish were taken from a pond and carefully sorted and counted, each fish being examined previous to selection. They were then deposited in carriers made by Mr. Burgess, and having been placed on carts were driven rapidly away to the railway station and placed in the train.

The time and trouble expended in the operation are considerable, and, as great care has to be exercised throughout, it becomes a laborious process. But when that is over and the fish entrained no further trouble is experienced, and on arrival at their destination the carriers have only to be taken to their destination and emptied. I had an opportunity of inspecting a large number of ponds, and noting how the fish lived therein, thus enabling me to see for myself how readily Salmonidæ become naturalised to enclosed waters or ponds, and how great is their capacity for thriving therein. Of course the needful conditions under which that desideratum can alone be acquired must be present, the two most important being ample food and running water. Both these conditions can often be acquired if non-existent by artificial means, and if not there is the alternative of planting some of the coarser fishes which are adapted to still waters. I obtained some valuable hints coupled with practical demonstrations which gave me a deep insight into the whole process of fish-keeping. The establishment is the largest in England, and by reason of the natural adaptability of the site the fish are supplied with an abundance of pure water thickly charged with all kinds of food of such a character as is most conducive to physical development.—W. A. C.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain
1890. September.		Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min.	In sun.	On grass		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.		
Sunday	21	29.747	61.0	55.2	S.	58.0	66.6	52.2	102.3	47.7	0.035	
Monday	22	29.753	59.6	55.1	S.W.	57.9	67.4	53.5	107.0	50.9	—	
Tuesday	23	29.929	58.6	55.9	S.W.	57.8	66.1	51.4	100.2	47.2	0.206	
Wednesday	24	30.216	57.2	54.1	S.W.	57.0	66.2	49.2	109.5	46.5	—	
Thursday	25	30.375	61.1	57.8	W.	56.9	67.4	54.2	108.7	50.9	—	
Friday	23	30.430	60.0	56.9	S.W.	56.9	67.7	49.8	79.8	46.6	—	
Saturday	27	30.446	62.4	60.8	S.W.	57.3	74.4	56.0	106.4	52.4	—	
		30.125	60.0	56.5		57.4	68.0	52.3	102.0	48.9	0.241	

REMARKS.

21st.—Bright morning; generally cloudy in afternoon; showers in evening.
 22nd.—Bright and fresh till 10 A.M., then frequently cloudy, and slight shower at 11.30 A.M.
 23rd.—Cloudy, with occasional sun in morning, slight shower at midday, then fine; some sunshine and thunderstorm from 4.30 to 6 P.M.
 24th.—Brilliant till 11 A.M., then overcast; distant thunder in afternoon.
 25th.—Fine, with much bright sunshine.
 26th.—Overcast all day; bright night, with lunar halo.
 27th.—Overcast till 11, then fine and bright.
 Another fine and warm week. The thunderstorm on the 23rd was not severe here though it is reported to have been so in the west of London.—G. J. SIMONS,



AFTER the remarkable display of Apples and Pears this week in the historical building indicated it will be impossible for anyone to sustain the allegation that British fruit of the first size, colour, and quality cannot be grown in British soil. In no fruiterer's shop in London, where the best obtainable specimens are procured from various parts of the world, could such Apples be found as those represented in hundreds of dishes at the Exhibition in question. No doubt a few of the most striking specimens, such as Mr. Samuel Barlow's magnificent Peasgood's Nonesuch (the finest ever seen at a show), were grown with the aid of glass, but leaving them entirely out of comparison there was more than enough of genuine outdoor-grown fruit to prove to demonstration that the resources of this kingdom are equal to the production of hardy fruits of the highest order of excellence, and with which the most exacting critics could find no fault.

Only a very few years ago such an exhibition as the one under notice could not have been provided either in the London Guildhall or anywhere else in this country, and it is clear that earlier efforts in improving the supply of home-grown fruit are beginning to tell. It is most gratifying to observe the advance that has been made, and we look forward hopefully to its extension over every part of the kingdom in which the requisite concrete conditions exist for the profitable culture of useful fruits. The improvement already effected, though distinctly marked, is mainly limited to gardens, nurseries, and fruit farms managed by skilled cultivators. This is only what might be expected under the circumstances, and is satisfactory as proving what can be done by good management.

We trace the better production of Apples to the Congress held in the Royal Horticultural Society's Gardens at Chiswick in 1883. As the immediate result of that event, large numbers of trees of well chosen varieties were planted; but only professional men, with trifling exceptions, either visited the great national display of Apples on that occasion, or benefited by the information given in the report, and through the gardening press. We are convinced that the Royal Horticultural Society never did more good than by its fruit congresses and conferences, and the Society must be acknowledged as the pioneer in the improvement of fruit culture in the United Kingdom. But its influence could not, for obvious reasons, directly reach a large section of the community who might grow fruit with advantage to their families, instead of either going without or buying the produce of other lands, for it is an astounding fact that the inhabitants of many country towns and villages have during recent years been practically supplied with imported Apples. We have done all that was in our power to disseminate the good work of the Society, and shall hope to do more, and we shall similarly render what aid we can to other agencies that well and worthily engage in a movement that is calculated to be of benefit to individuals and the nation at large.

When Sir James Whitehead was Lord Mayor of London last year he made fruit culture a theme of many eloquent discourses. He was the first Lord Mayor who gave the weight of his high authority to the subject; the first also, we believe, who imposed the condition that the presentation of fruit in accordance with ancient custom from the Fruiterers' Company at the Mansion House should consist entirely of home-grown produce, and a splendid contribution it was. With the object of continuing his efforts

as effectively as possible in the cause of hardy fruit culture in the homesteads of the United Kingdom, he joined the Livery of the Fruiterers' Company, and was elected to the position of Master the first year. He then took up the idea that had been considered by Mr. H. R. Williams and friends of having a great show of home-grown fruit in the City, a project that was well received by the civic authorities. He believed that by showing the wealthy citizens what could be done in the growth of fruit he would enlist their sympathy, and so gain an accession of strength and influence to the Guild, which is not like some other City companies—rich. Taking as his basis of action the promotion of hardy fruit culture in the cottage gardens and homesteads, he obtained the patronage of Her Majesty, and other distinguished persons. He also sought the co-operation of practical men, and the outcome of their efforts was a show that may fairly be described as extraordinary. Not only was the noble building filled with fruit, but the art galleries were crowded, and the old city council chamber with corridors had to be requisitioned. Upwards of 7000 square superficial feet of tabling were occupied, and 4500 plates used. The display exceeded the most sanguine expectations, and the throng of visitors will not soon be forgotten by those who were in the crowd. Every portion of the space was packed, and hundreds could not gain admittance when the Lord Mayor in state opened the Show on Monday afternoon. All day on Tuesday the Show was similarly thronged, and so it continued to be till the hour of closing on Wednesday evening.

Generally speaking the fruit was of high excellence, and in some of the classes the competition was very severe. In the class in which the gold, silver-gilt, and silver medals were offered 600 dishes were staged. Mr. Barlow had the champion dish, his five Apples of Peasgood's Nonesuch weighing 8 lbs. 14 ozs., yet he failed to win one of the medals, but was awarded an extra prize. This will indicate the superior character of the exhibits. In the south-eastern zone alone there were twenty-six entries of twelve dishes of dessert Apples, thirty-four of twelve cooking Apples, and forty-four of three dishes of dessert and three of culinary. There were nineteen collections of fruit from nurserymen, which made an imposing display, and a remarkably good and very interesting collection from the Royal Horticultural Society. We publish the prize list as supplied to us officially, and such notes of the fruit as could be obtained under circumstances of difficulty.

The weakest part of the Show was in the cottagers' and tenant farmers' classes, and this proves the necessity for the effort being made in their interests. They, however, staged between 300 and 400 dishes, and some most creditable samples of Apples and Pears. The Show is calculated to do a great amount of good in the direction intended, and it was most pleasant to see the countenance given to it by the Royal Horticultural Society, the respected Secretary of the Society and Superintendent of Chiswick being both exhibitors and Judges. This is the best answer to the somewhat undignified and absolutely groundless suggestions that the undertaking was in some way antagonistic to the Society. The Royal Horticultural Society is doing as much as it can do, and both it and the Fruiterers' Company will each, in their way, and in mutual friendliness, do a great deal for fruit culture in gardens large and small over the length and breadth of the land.

We give on page 315 an illustration, speedily prepared, of the Guildhall Fruit Show, also a portrait of Sir James Whitehead, Bart., the Chairman of the Executive Committee, this latter being supplied to us with the compliments of Mr. H. Cannell, as prepared by him on the occasion of a visit of Sir James to the nursery at Swanley.

The present is, we believe, the third occasion on which the Guildhall has been occupied by horticulturists, the first being by a flower show, which led to the establishment of the United Horticultural Benefit and Provident Society in 1866; and the second, by a banquet in connection with the International Horticultural Show also in 1866. The City authorities and various Guildhall officials gave

ready and valuable aid in the preparations, and thus largely contributed to the success of the Show to which these notes refer. Mr. G. W. Cummins and assistants worked willingly and well in staging the fruit, and the judging was completed by the appointed time.

FLOWER CULTURE FOR PROFIT.

RICHARDIAS.

At present there are no signs of any abatement in the demand for this popular plant, nor is there likely to be while church decoration is practised on the same elaborate and expensive style as during the past decade, and memorial wreaths and crosses are so much in request. Richardias would really appear to be indispensable for these purposes, nor is this to be wondered at, seeing how serviceable it is. Those who are favoured with numerous orders for wreaths and crosses must find the spathes most profitable, and even those who market or sell at wholesale rates have not much cause to complain. At the festivals of Christmas and Easter the best prices are obtained, ours not unfrequently being sold locally at the rate of 9s. per dozen, and for rather less sums, or from 6s. to 8s. when sent to large towns. At other times, unless wanted for a special purpose, the price per dozen is about 4s. clear. Seeing that numbers of plants can be grown in positions, perhaps, which would not be otherwise utilised, such as newly started vineries and Peach houses, as well as the stagings of greenhouses and the conservatory beds, they may be said to pay very well even if the lower figures only were reached.

The best methods of culture have been so often discussed that there is not much necessity for enlarging upon them afresh, though I cannot avoid touching upon the principal facts. I have tried preparing the plants in the pots in which they are to flower, and also by planting out and potting in due course, and I am of opinion that the latter plan is both simpler and better. We have numbers that were started early in 8-inch pots being intended to flower in December, and so doubtless they will, but those planted out have already commenced flowering, and are by far the most vigorous. At the same time I must protest against the assumed necessity for preparing Celery-like trenches for Richardias, in our case at any rate it is not required. It is not huge plants and great coarse spathes that are wanted, but rather a greater profusion of medium sized to small spathes, and the plants to produce the latter can be had with little trouble. Where many err is in too long delaying the planting out. There is no necessity to keep the plants in pots nearly or quite without water for several weeks in order to force them to rest, the better plan being to turn them out of the houses directly they have ceased flowering, and to take the first opportunity of pulling them to pieces, roughly trimming off the old leaves and planting out.

A lumpy soil is unfavourable, as the plants start feebly in it, and cannot be well lifted out of this, but a breadth of well-pulverised ground that would grow Carrots and other root crops well is equally suitable for Richardias. Plant the divisions 1 foot apart in rows 2 feet asunder, keep the ground clean, mulch with strawy litter or manure, and little further trouble need be taken unless the summer be exceptionally hot and dry, in which case a few good soakings of water will prove beneficial. All ought to be potted before a frost cripples them, 4° or 5° being enough to seriously injure them. This season the lifting was safely deferred till the end of September, but there have been seasons when they had to be lifted a fortnight earlier. There is no need for lifting a great ball of soil with the roots, but every care should be taken of the roots. Whether they are placed singly in 7-inch or rather larger pots, or three in 9-inch pots, or in still greater numbers in larger sizes, ought to depend upon circumstances, the smaller sizes being handy for house and church decoration, and convenient for small or light stages, but if the plants have to be set on the floors or beds of houses they seem to do best when from nine to twelve strong plants are placed in 15-inch or rather larger pots. The drainage ought to be good, and any fairly rich compost suits them well. They flag but little in full sunshine in spite of the rough treatment given them, a good soaking of water and a few syringings soon putting them right. All should be housed on the first symptoms of a frost.

A staly position under glass will not do for these plants, as the nearer the glass or the lighter the quarters they are kept in the sturdier and more floriferous they become. Therefore, give them good room, plenty of light and water whenever the soil is at all dry, though there is no necessity for or wisdom in standing the pots in saucers or pans of water. Liquid manure of some kind is needed frequently after the flowering period has commenced. They are comparative failures in cold houses, or those heated only when frosts are imminent, and high temperatures are equally objectionable. Under the former conditions spathes are sparingly

produced till warm spring weather is experienced, this being when they are frequently a glut in the market, while a forcing temperature causes a spindly growth and an attack of aphides. A little fire heat ought always to be provided, and air admitted freely whenever the weather is mild. I never look at the thermometer except during very frosty weather, but should say our houses, in which Richardias are principally grown, are, during the winter and early part of the spring, seldom above 55°, and not often lower than 45°, the night temperature on an average being nearer 50°. Green fly is frequently very troublesome, and once this pest is allowed to gain a good foothold it is very difficult to exterminate. Yet this must be done, or the spathes will be of little value. Fumigations with tobacco paper directly the aphides are seen, or better still in anticipation of their visits, will keep the plants clean.

The spathes keep better off the plants than they do left uncut, but it is a mistake to keep them long after they are fully grown, or many of them will have lost their freshness and value before they reach their destination. In anticipation of the extra demand and better prices at Christmas and Easter, the flowers with a good length of stem should be kept in jars of water placed in a cool dark room. The stems being cut over frequently the flowers will keep fairly fresh for about ten days. Their own foliage is required with them by decorators, an extra charge sometimes being made for these. We are content to give the leaves, and believe the spathes sell the more readily in consequence. All should be cut with long stems, and packed closely and flatly in long shallow boxes lined with clean moss, clean tissue paper being placed over them, and sufficient cotton wool on this to keep the flowers from shifting, the lids closing tightly on this.—M. H.

ASPHALT WALKS.

As from time to time I have been asked by gardening friends who have called on me how we make the asphalt for our walks here I venture to hope that the plan I am about to describe may be of use to some of the readers of the Journal who are desirous of having a good hard walk at as little expense as possible.

Everyone will admit there is nothing to equal in appearance a well-made gravel walk, whether in the kitchen garden or elsewhere; but when that kitchen garden happens to be on a sharp slope they will also admit it is annoying to have to wheel all the gravel from the bottom of the garden to the top after every thunderstorm, so that the advantage of asphalt in a case like this is very apparent, as when once it is properly laid it requires very little expense to keep it in good condition.

There is, however, one drawback which perhaps it would be as well to state at once, and that is it is a work that requires to be done in the summer, when, as a rule, gardeners have little time to spare for extra work of this kind; yet when we come to consider the labour and expense of keeping ordinary walks clean the extra labour entailed is but trifling, and we have all the winter before us to collect materials and prepare the walks to be operated upon.

In preparing an old walk for asphaltting, if there is any doubt about the drains being in perfect order they should be examined, and if necessary taken up and relaid some time in winter, as then there will be plenty of time for the soil that has been moved above the pipes to become solid again, so that there may be no chance of it sinking after the walk is made. If edging tiles are used they should be looked to and placed down firmly, so as to have a straight and tidy appearance when the walk is finished. Materials may also be collected and everything prepared, so that there may be no delay when the fine weather arrives.

The ashes I have found to answer the best for mixing with the tar are those made from steam coal, such as comes from locomotive engines (they can be obtained from almost any railway company at a very cheap rate). These should be passed through a half-inch screen, the coarser particles answering well for placing in the bottom of the walk, or if there is sufficient ballast in the walk, say 4 inches, it will not be necessary to disturb it more than to take off sufficient of the surface to allow for about 2 inches of the tar to be placed on when the walk is being made.

The remainder of the work must be done in fine dry weather. The sifted ashes should be spread out thinly in a sunny spot, and turned over occasionally for the moisture to evaporate; also procure some lime, old mortar rubbish, or gas lime, very dry, and screened like the ashes, as if this is applied at all lumpy it will sometimes spoil the surface of the walk by raising the tar and breaking it.

When the materials are dry, add one barrowload of the lime (or lime rubbish, as the case may be) to two of the sifted ashes. Mix well, make a hole in the centre of the heap, and pour on sufficient tar cold, so that when mixed it will be of the consistency of mortar. Care must be taken that there is no water added to the heap with the tar, as this will spoil it.

All being in readiness for laying down the walk, sprinkle some

tar over the surface of the walk to be made, and lay on the mixture so that when pressed down it will be of an uniform thickness of about 2 inches. Draw it down smoothly as the work proceeds with the back of a wooden rake, scatter on a little dry road grit over the surface, sufficient to keep it from sticking, and pass a light roller over it.

The walk will be rendered more solid if, after the rolling, it is gently beaten down with wooden rammers, especially along the edges. If there are any walks running into the one that is being operated on, a piece of board 1 inch thick should be let into the ground across where the walks meet, to form an edging to keep the asphalt from being pressed out by the roller.

After a day or two the walk should be firm to the feet; then choose a fine day and pour some cold tar over the surface, brushing it gently with a broom, and allow it to soak in. This will fill up all spaces, and render the walk sound and durable.

If at any time the surface should show signs of wearing, a little tar poured over the surface before it is too bad, and brushed in, will soon improve it, and make it quite firm again. I have tried various experiments, both by boiling the tar and using it cold, also with different materials, but the above is the most simple and economical plan I have been able to discover, and answered here admirably. I could not perceive any advantage in boiling the tar; it is a very disagreeable business, and one I was very glad to find I was able to dispense with.—C. O. S.



ROSE ANALYSIS, 1886—1890.

THE Crystal Palace Exhibition of the National Rose Society proved this year in one respect the most satisfactory the Society has yet held. For, as recently pointed out in this Journal by "J. H. P.," on no previous occasion has such a large proportion of the blooms exhibited retained their freshness throughout the entire show day. But then this show day was no ordinary one, being, without exception, the coldest day of the past singularly cold summer. The preceding night was also cold and extremely wet, thus allowing the flowers to reach the Exhibition in most cases in the same condition as when cut from the plants on the previous evening. Those Roses which, owing to their want of substance or the fleeting nature of their tints, are generally difficult to stage in exhibition form, were consequently for once especially favoured. On the other hand, the weather proved too chilly and damp for most of the thin petaled varieties. Fortunately for our analysis the Rose season of 1890, although not nearly so forward as about midsummer day it promised to be, was nevertheless again an unusually early one, so that in the present analysis the later flowering Roses are better represented than has hitherto been the case.

From the short statement given below it will be seen that nearly ten thousand Roses have been altogether tabulated during these five years, all, be it remembered, Roses which have appeared in first, second, third, or fourth prize stands.

	HYBRID PERPETUALS.	TEAS AND NOISETTES.
1886	1038	509
1887	1130	642
1888	1247	854
1889	1176	778
1890	1396	631
	<hr/> 5987	<hr/> 3414

Throughout the accompanying tables the established kinds find places according to the average number of times they were staged at all the five exhibitions. As, however, it would not be fair to the comparatively new Roses if they were placed on precisely the same footing as those which have been in general cultivation for a number of years, the following scale, which is similar to that employed in former years, has been adopted. The positions of varieties sent out in 1883 are dependent upon their averages for the last four shows, those of 1884 upon their averages for the last three shows, and those of 1885 on their averages for the last two shows only. In the case of the still newer sorts, their 1890 form has alone been taken into consideration.

The Hybrid Perpetuals which were shown in the greatest number of prize stands at the first four exhibitions were as follows:—In 1886 and 1887 Madame G. Luizet appeared in forty-seven and

thirty-eight stands respectively; in 1888 A. K. Williams and Madame G. Luizet each in thirty-six stands; and in 1889 Captain Christy in forty-two stands. Ulrich Brunner has, however, this year eclipsed all previous performances, having been shown in no fewer than fifty-seven prize stands. Other varieties which were much more frequently staged than at either of the four preceding Metropolitan Exhibitions were La France, Marie Baumann, François Michelin, Charles Lefebvre, Etienne Levet, Marie Verdier, Prince Arthur, and Heinrich Schultheis. Among well known sorts very indifferently represented may be mentioned such fine weather beauties as Captain Christy, Marie Rady, Duchesse de Vallombrosa, Monsieur Noman, and Reynolds Hole.

Madame Gabriel Luizet still continues to take the lead of all the Hybrid Perpetuals as an exhibition Rose, a position this variety has held throughout the whole five years. Nevertheless another light pink variety, Mrs. John Laing, sent out ten years afterwards, promises when more largely grown to become a serious rival, possessing as it does so many good qualities, not only as a flower but also as a plant. Her Majesty, first distributed in 1885, stood last year in the position now taken up by Mrs. J. Laing, but has this year, doubtless owing in some measure to the unfavourable character of the season, fallen to the ninth place on the list. 1886 is represented by Viscountess Folkestone, a large flower of an exquisitely delicate shade of pale salmon, but somewhat loose and rough in the petal. This is tabulated for the first time, and will be found at No. 44. Mrs. John Laing, the leading flower of 1887, has already been referred to. Earl Dufferin, sent out in the same year, has improved very little on its 1889 form, being now at No. 24 instead of No. 25. Lady Helen Stewart on its first appearance just manages to secure a footing at the bottom of the analysis, while Sir Rowland Hill (1888), another new comer which may be described as a rich plum coloured Charles Lefebvre, takes up its position at No. 53. Now there is a very remarkable circumstance which must be mentioned in connection with these six new Roses, and that is that we are not indebted to the continental growers for any of them, four having been raised in England and the remaining two varieties in Ireland.

Turning our attention to the table of Teas and Noisettes we find that the positions of the three leading flowers—Catherine Mermet, Innocente Pirola, and Comtesse de Nadaillac—remain altogether unchanged since last year. The effect of the cold, wet, and sunless weather previous to the Show is, however, clearly traceable on many other varieties; for instance, Caroline Kuster, Jean Ducher, Etoile de Lyon, and Madame Angèle Jacquier have all lost more or less ground since the last analysis, whereas those flowers which are less susceptible to humid conditions of the atmosphere—such as Madame Lambard, Marie Van Houtte, Rubens, Souvenir d'un Ami, and Jules Finger—appeared in unusual force. Francisca Kruger was also well shown, but on the other hand there were but few Maréchal Niels or Edith Giffords.

Like 1888 this was another Lambard year, but we have to go back to the Jubilee year in order to find a show in which Maréchal Niel appeared in nearly every prize stand. During the last two seasons this, by far the finest of all the yellow Roses, has scarcely been seen at all, whereas in the first three analyses it stood only second to Catherine Mermet.

The following are the only three new Teas on the list:—The Bride, a lemon-white sport from Catherine Mermet, and the sole representative of 1885, has gone down one step since last year; the position now accorded to it is, however, still a very honourable one (No. 5). Madame Hoste (No. 25), introduced in 1887, finds a place in the table for the first time; the colour of this variety, a soft creamy yellow, is one much wanted, and no doubt in a warmer season it will be more freely exhibited. The only other new Tea is Souvenir de S. A. Prince, a white sport from Souvenir d'un Ami, which, although only sent out last year, already stands as high as the Rose last named.

I have in conclusion to thank those kind friends who this year assisted me in taking down the names of the Roses at the show.

For the benefit of beginners and others I again submit a select list of varieties which can be recommended for general cultivation.

HYBRID PERPETUALS.—*Light-coloured Varieties.*—Madame G. Luizet, La France, Merveille de Lyon, Captain Christy, Marie Finger, Baroness Rothschild, and Mrs. J. Laing. *Medium Reds.*—François Michelin, Ulrich Brunner, Marie Verdier, Marquise de Castellane, Camille Bernardin, Comtesse d'Oxford, Dupuy Jamain, Heinrich Schultheis, and Suzanne Marie Rodocanachi. *Reds.*—Marie Baumann, A. K. Williams, Alfred Colomb, Prince Arthur, Earl of Dufferin, E. Y. Teas, Ferdinand de Lesseps, Sénateur Vaisse, Victor Hugo, Earl of Pembroke, and Madame Henri Pereire. *Dark Varieties.*—Charles Lefebvre, Louis Van Houtte, Horace Vernet, Duke of Wellington, Duke of Connaught, and Sir Rowland Hill.

TEAS AND NOISETTES.—Innocente Pirola, Souvenir d'un Ami,

Caroline Kuster (N.), Marie Van Houtte, Madame de Watteville, Hon. Edith Gifford, Madame Lombard, Anna Ollivier, Francisca Krüger, Rubens, Jules Finger, Madame Hoste, Perle des Jardins, Souvenir de Thérèse Levet, Souvenir de S. A. Prince, and L'Ideal (N.).

HYBRID TEAS.—Grace Darling and Viscountess Folkestone.

BOURBON.—Souvenir de la Malmaison.

CLIMBING ROSES.—William Allen Richardson (N.), Gloire de Dijon (T.), Bouquet d'Or (N.), Belle Lyonnaise (T.). *Summer-flowering Varieties*.—Blairii (H.C.), Charles Lawson (H.B.), Coupe d'Hébé (H.B.), Bennett's Seedling (Ayr.), Félicité Perpetué (Evergreen), and Madame Plantier (H.N.).—E. M., *Berkhamsted*.

HYBRID PERPETUALS.

Position in Present Analysis.	Average Number of Times Shown in the Five Years.	Number of Times Shown in 1890.	Name.	Date of Introduction.	Raiser's or Introducer's Name.	Colour.
1	37.0	40	Madame Gabriel Luizet	1877	Liabaud	Light silvery pink.
2	36.0	36	Mrs. John Laing	1887	Bennett	Light pink.
3	35.0	45	La France	1867	Guillot	Silvery rose.
4	34.0	57	Ulrich Brunner	1881	Levet	Cherry red.
5	33.4	44	A. K. Williams	1877	Schwartz	Bright carmine red.
6	33.2	40	Marie Baumann	1863	Baumann	Soft carmine red.
7	28.0	34	François Michelon	1871	Levet	Deep rose.
8	27.2	28	Merveille de Lyon	1882	Pernet	White.
9	27.0	21	Her Majesty	1885	Bennett	Pale rose.
10	23.2	12	Captain Christy	1873	Lacharme	Delicate flesh.
11	22.8	30	Alfred Colomb	1865	Lacharme	Bright carmine red.
11	22.8	34	Charles Lefebvre	1861	Lacharme	Purplish crimson.
12	21.4	34	Etienne Levet	1871	Levet	Carmine rose.
12	21.4	16	Marie Finger	1873	Rimbaud	Light salmon rose.
13	21.2	15	Lady Mary Fitzwilliam	1882	Bennett	Rosy flesh.
14	21.0	6	Marie Rady	1865	Fontaine	Bright carmine red.
15	20.8	29	Louis Van Houtte	1869	Lacharme	Deep crimson maroon.
16	19.4	33	Marie Verdier	1877	E. Verdier	Pure rose.
17	18.2	24	Duke of Edinburgh	1868	Paul & Son	Scarlet crimson.
18	17.8	21	Baroness Rothschild	1867	Pernet	Light pink.
19	17.0	28	Comtesse d'Oxford	1869	Guillot	Carmine violet.
20	16.4	13	Xavier Olibo	1864	Lacharme	Dark velvety crimson.
21	16.0	19	Horace Vernet	1866	Guillot	Purplish crimson, shaded.
21	16.0	23	Prince Arthur	1875	Cant	Bright crimson.
22	15.8	19	Marquise de Castellane	1869	Pernet	Clear cherry rose.
23	15.6	19	Camille Bernardin	1865	Gautreau	Light crimson.
24	15.0	15	Earl of Dufferin	1887	A. Dickson & Son	Deep crimson.
25	14.3	27	Duke of Wellington	1864	Granger	Vivid crimson, shaded.
26	14.2	18	Beauty of Waltham	1862	W. Paul & Son	Rosy crimson.
27	13.8	19	Dr. Andry	1864	E. Verdier	Bright crimson.
28	13.6	21	Dupuy Jamain	1868	Jamain	Bright cerise.
29	13.4	12	Le Havre	1871	Eude	Vermilion red.
30	13.2	25	Heinrich Schultheis	1882	Bennett	Delicate pink rose.
31	12.6	18	E. Y. Teas	1874	E. Verdier	Bright carmine red.
32	12.4	18	Ferdinand de Lesseps	1869	E. Verdier	Shaded crimson.
33	12.2	4	Duchesse de Vallombrosa	1875	Schwartz	Pale flesh.
34	11.6	20	Général Jacqueminot	1853	Rousselet	Bright scarlet crimson.
35	11.4	10	Abel Carrière	1875	E. Verdier	Crimson maroon.
35	11.4	14	Duke of Teck	1880	Paul & Son	Crimson scarlet.
36	11.0	0	Monsieur Noman	1866	Guillot	Pale rosy pink.
36	11.0	19	Pride of Waltham	1881	W. Paul & Son	Light salmon pink.
37	10.8	15	Madame Victor Verdier	1863	E. Verdier	Clear light crimson.
38	10.6	13	Sénateur Vaisse	1859	Guillot	Bright crimson.
39	10.4	7	Star of Waltham	1875	W. Paul & Son	Carmine violet.
40	10.0	16	Prince Camille de Rohan	1861	E. Verdier	Crimson maroon.
41	9.8	9	Fisher Holmes	1865	E. Verdier	Shaded crimson scarlet.
41	9.8	1	Marie Cointet	1872	Guillot	Light pink.
42	9.6	13	Duchess of Bedford	1879	Postans	Light scarlet crimson.
43	9.2	10	Countess of Rosbery	1879	Postans	Carmine rose.
43	9.2	6	Marguerite de St. Amand	1864	Sansal	Clear rosy flesh.
44	9.0	9	Viscountess Folkestone	1886	Bennett	Creamy white, shaded pink.
45	8.7	11	Victor Hugo	1884	Schwartz	Bright crimson, shaded.
46	8.6	14	Duchesse de Morny	1863	E. Verdier	Silvery rose.
46	8.6	1	Reynolds Hole	1873	Paul & Son	Deep scarlet maroon.
47	8.4	2	Violette Bouyer	1881	Lacharme	Tinted white.
48	8.2	7	Charles Darwin	1879	Laxton	Brownish crimson.
48	8.2	12	Madame Eugène Verdier	1878	E. Verdier	Light silvery rose.
49	7.8	6	Queen of Queens	1883	W. Paul & Son	Pale blush pink.
50	7.4	6	Madame H. Jamain	1871	Jamain	Pale flesh.
51	7.2	8	Comte Raimbaud	1867	Rolland	Clear crimson.
52	6.8	11	Magna Charta	1876	W. Paul & Son	Bright pink carmine.
53	6.0	8	Auguste Rigotard	1871	Schwartz	Cherry red.
53	6.0	6	Sir Rowland Hill	1888	Mack	Deep velvety plum.
54	5.6	3	Comtesse de Serenye	1874	Lacharme	Very pale rose, shaded.
54	5.6	8	Madame Isaac Perière (B.)	1880	Margottin, fils	Bright carmine red.
55	5.4	4	Rosieriste Jacobs	1880	Ducher	Dark velvety red.
56	5.0	5	Lady Helen Stewart	1887	A. Dickson & Son	Bright scarlet crimson.

TEAS OR NOISETTES.

Position in Present Analysis.	Average Number of Times Shown in the Five Years.	Number of Times Shown in 1890.	Name.	Date of Introduction.	Raiser's or Introducer's Name.	Colour.
1	40.7	42	Catherine Mermet	1869	Guillot	Light rosy flesh.
2	38.6	41	Innocente Pirola	1878	Madame Ducher ...	White, slightly shaded.
3	35.7	35	Comtesse de Nadaillac	1871	Guillot	Rosy flesh and apricot.
4	32.6	34	Souvenir d'un Ami	1846	Belot Defougère ...	Pale rose.
5	32.0	31	The Bride	1885	May.....	White, tinged lemon.
6	31.4	30	Souvenir d'Elise Vardon.....	1854	Marcest	Yellowish rosy cream.
7	30.8	36	Marie Van Houtte	1871	Ducher	Yellowish white, tinged rose.
7	30.8	28	Niphetos.....	1844	Bougère	White.
8	29.2	18	Caroline Kuster (N.)	1872	Pernet.....	Lemon yellow.
9	29.0	19	Maréchal Niel (N.).....	1864	Pradel.....	Deep golden yellow.
10	27.0	24	Madame de Watteville	1883	Guillot	Cream, bordered rose.
11	24.4	15	Jean Ducher	1874	Madame Ducher ...	Salmon yellow, shaded peach.
12	23.4	24	Madame Cusin	1881	Guillot	Violet rose.
13	19.6	10	Honourable Edith Gifford	1882	Guillot	Creamy white, shaded flesh.
13	19.6	23	Madame Lambard	1877	Lacharme	Salmon, shaded rose.
14	18.2	31	Francisca Krüger.....	1879	Nabonnand	Coppery yellow, shaded rose.
15	17.8	17	Madame Bravy.....	1848	Guillot	White, flushed pale pink.
16	17.2	18	Anna Ollivier	1872	Ducher	Pale rosy flesh, shaded buff.
17	16.6	24	Rubens	1859	Robert	Creamy white.
18	15.6	7	Etoile de Lyon	1881	Guillot	Bright sulphur yellow.
19	13.2	10	Souvenir de Paul Neyron	1871	Levet	Creamy white, tinged rose.
20	12.8	14	Princess of Wales.....	1882	Bennett	Pale rosy yellow.
21	11.4	2	Madame Willermoz	1845	Lacharme	Creamy white.
22	10.2	0	La Boule d'Or	1860	Margottin	Golden yellow.
23	7.8	12	Jules Finger	1879	Madame Ducher ...	Bronzy rose.
24	7.4	6	Devoniensis	1838	Foster.....	Creamy white.
24	7.4	4	Madame H. Jamain.....	1869	Guillot	White, shaded yellow.
24	7.4	3	Madame Margottin	1866	Guillot	Citron yellow.
25	7.0	7	Madame Hoste	1887	Guillot	Pale lemon yellow.
25	7.0	7	Souvenir de S. A. Prince.....	1889	Prince.....	Pure white.
26	5.6	0	Madame A. Jacquier	1879	Guillot	Light pink, shaded yellow.
27	5.0	0	Belle Lyonnaise	1869	Levet	Deep lemon.
27	5.0	2	Perle des Jardins	1874	Levet	Bright straw colour.

GROWING AND SELLING FRUIT.

(Continued from page 289.)

RASPBERRIES.

THIS is another fruit which pays well for growing as a rule, and is easily cultivated. Large fields of several acres in extent are grown in Kent for jam, and for the London markets, but there is generally a good demand for Raspberries near any country town.

SOIL.—This suits them best if cool and moist all through the summer, and what is generally termed “stiff loam,” such as grows strong wild Briars to perfection, is sure to suit them. They should not be fully exposed to the noonday sun. A piece of ground sloping to the north is best, although they will grow and ripen a moderate crop in almost any soil or position, unless very dry.

PLANTING.—They should be planted at the same period as other fruits. The young suckers or shoots sent up from the roots a short distance off during the preceding summer are the best for planting, and it does not matter about the tops being weak if they have plenty of good fibry roots. They should be planted in rows 5 feet apart and 2 feet between the plants, or single rows may be run through at intervals in a mixed plantation, as the inclination of the planter may direct. The cost of plants and planting at 5 feet between the rows would be about £24 per acre.

PRUNING AND TYING.—Early in the spring, following planting, the tops should all be cut off to within 2 inches of the ground, as they ought never to bear any fruit whatever the first year, or the plants will die. They should not be cut down until all danger of severe frost is over or the whole plant may be killed. After this during the first summer they will throw up from one to four shoots, which should be reduced to two as soon as it is possible to see which are the strongest. These should be encouraged to grow as strongly as possible by watering and mulching during the summer, and early in the following spring before they commence leafing they should have their tops shortened. The length they are

to be left will now depend upon the system they are to be grown under. In many very large plantations it is the custom to cut them back to 2½ or 3 feet in height, and not to use any supports for them; but smaller quantities pay for attention in this respect, and are best secured by placing stout larch poles at intervals of every 20 feet up the rows. If these poles are dipped in creosote or gas tar they will last much longer. They should stand 5 feet above the ground, and go from 1½ to 2 feet below the surface. Galvanised wire should now be fastened the whole length of the row to these stakes by means of small staples, putting one wire within 4 inches of the top and another about 3 feet from the ground in places where the Raspberry is quite at home and grows to a good height; but if the canes are not likely to grow high enough to reach 4 inches above the top wire it must be fastened to the stakes at a less height from the ground to enable them to do so after about 1 foot has been cut off from them. They should be tied to each wire with twisted raffia, leaving room when tying for them to grow larger. As soon as all the fruit is gathered the old fruit-bearing canes should be cut out close to the ground, and any weak shoots also, leaving enough for tying-in 6 inches apart all along the wires. All shoots that are more than 4 inches on each side of the original sets or row should be chopped off when very young unless required for forming fresh plantations.

GATHERING AND MARKETING.—If required for dessert purposes or for cooking, Raspberries should be gathered in flat 1 lb. punnets like Strawberries, and sent to market in a large box as described for that fruit; and if for preserving they should always be gathered without stalks, and put into glazed jars or crocks, and at once securely fastened up and sent to their destination. When the fruit is ripening, advantage should be taken of every fine day when the fruit is perfectly dry to gather all that are coloured before they get too soft. This fruit is one of the most difficult to market in good condition, and to prevent any of them being spoiled by rain. When gathered with the stems they should be worth 6d. per lb. wholesale, and for preserving purposes 4d. to 6d., according to the season and the crop. A piece of ground under my charge gave a crop last year (1888) at the rate of 1 ton 13 cwt.

per acre, worth £68 10s., at the rate of 4d. to 6d. per lb., which is the price they fetch here. Cost of gathering a similar crop would be about £14 per acre. The season was a very bad one, a large quantity getting spoiled with the wet, and this result was only obtained under the highest cultivation—viz., plenty of good manure, and the plants tied to posts and wires 5 feet high, so that half the above produce would be about a correct average from an acre under field cultivation, and grown without stakes.

CULTIVATION.—A plantation of Raspberries should last at least twenty years; with good cultivation and manure when requisite in poor soils they will pay for a supply every winter—about 20 tons per acre—stronger and richer land will not require it so often. They should also be kept strictly clean and free from weeds, and especially from Bindweed or wild Convolvulus, which is very difficult to kill when once it gets established, and which often does much mischief by growing over the fruit and young shoots. Raspberry plantations should never be deeply dug, as they root very near to the surface. A light forking over, therefore, in the winter is all they require—just enough to bury the manure under the surface if any is given, and to cover in any weeds that may be growing among them. If the soil is of a dry nature a good mulching over the roots, as recommended for Strawberries, will be of great benefit in dry summers, and will double the weight of the crop if put on early before the ground gets dry.

ENEMIES.—Birds, and especially blackbirds, are the worst foes the Raspberry has, and must be destroyed or frightened off in the usual way if the plantation is open. Hares and rabbits will sometimes do a great deal of mischief in severe winters, and wire netting must be put round to protect the plants.

VARIETIES.—Only the red ones are of any use for market. Two of the best are Fastolf and Baumforth's Seedling.

RED CURRANTS.

These do well in a mixed plantation, and under standard Apples, if not too much shaded. They will grow in drier and warmer soils than Black Currants; but where the latter will thrive they are, as a rule, the most profitable.

PLANTING.—Young plants may easily be raised from cuttings exactly as described for Gooseberries, but much time is saved by purchasing three-year-old plants. Where nothing else is to be grown on the same plot they may be 5 feet apart each way when put in their permanent positions, and at this distance will require about 1740 plants per acre; the cost of plants and planting will be about £12 per acre. They should be planted about the same time as Gooseberries or Black Currants, and the other details of cultivation are the same, with the exception of pruning.

PRUNING.—In this respect the requirements of the Red Currant are very different from those of the Black, as the latter bears best on the young wood while the Red answers best if the young wood is cut off almost close to the main stem at pruning time in the autumn, leaving only about an inch in length unless it is desirable to extend the number of branches or the size of the tree. Young trees should be encouraged to form six or seven main branches, keeping the centre of the bush open all the time like a basin, until the trees reach their full height, about 4 feet. The leading shoots should have only about one-third of their length cut off, and when the tree gets to its full height they may be cut at the points as in other parts, thus keeping the old main stems, which by this time will be full of buds their whole length and bear very freely; it is well to encourage a young branch to grow up if any of the others show signs of weakness from old age, and thus to gradually replace them. Summer pruning is also very beneficial to Red Currants, cutting all young wood back to about 3 inches as soon as the fruit is gathered if it is not required for extending the tree, and reducing the pieces left to 1 inch in length at the winter pruning. Red Currants are pruned by the Kent "tree cutters" at 1s. to 1s. 6d. per hundred, according to size.

GATHERING AND MARKETING.—As with other bush fruits, the gathering is generally done by women and children in the large fruit-growing districts, who are paid about 3d. per half sieve. This fruit also requires gathering before it gets over-ripe if intended to be sent a long distance, otherwise it will smash, and in that state is useless in any market. If for disposal in the neighbourhood it may get riper before gathering. Packing is the same as for Black Currants, and prices range from 1s. to 2s. 6d. per stone. The quantity grown per acre will generally be rather more than for Black Currants.

CULTIVATION.—Same as for Black Currants.

ENEMIES are fortunately not numerous. Caterpillars will sometimes eat the leaves, and should be picked off by hand and destroyed if numerous. Birds, and especially robins, are very fond of the ripe fruit, and must be frightened away.

VARIETIES.—The Scotch is grown very much for market, being firm and large. Red Dutch is also a good hardy variety.—W. H. DIVERS.

(To be continued.)

TRANSPLANTING LARGE SHRUBS.

FROM time to time we have heard much upon this subject, and the results of experience have varied as much, if not more, than the different localities from which they have written; added to which, soils and subsoils have a material effect upon all transplanting operations. I have met with some who strongly advocated that there can be no better period of the year for carrying out improvements and alterations about the grounds of any residence than early in the autumn. They base their argument principally upon the fact, that during the summer months the earth becomes heated to a much greater depth than it is in the other months of the year, and assert that moving a certain portion of earth cannot be done without fully exposing it all to the action of the air, even if the time which the operation takes is very limited; that in many instances shrubs will, under these conditions, begin to emit fresh roots in the course of ten days or a fortnight after their being removed; and that they will often, after being so removed, start in the following spring quite as fresh and vigorous as those which have not been removed.

This is one side of the question, and I imagine those who advocate this mode of proceeding reside upon gravelly soils or chalky formations, where the drainage is naturally good, and where the soil never becomes saturated with stagnant moisture, which is sure to cause young and tender roots to become ruptured and ultimately decay.

Strong soils never answer well for transplanting large shrubs or trees, and I consider it by far the best policy in all such to have quite young plants. They may look very diminutive for a time, but it is far better to bear with this than to endeavour to give effect at once with much larger specimens. I have seen these have all the care and attendance for a season which could be bestowed upon them, by mulching the ground above their roots, and likewise giving them copious supplies of water; but after all, many of them would soon become little better than sticks, not half clothed with leaves.

After a season or two, notwithstanding every precaution, it would be found necessary to supply healthy young plants. These may, and often will, for a season or two, almost stand still, not growing more than a few inches. Nevertheless, they will generally retain all their freshness; though a few of them may lose most of their leaves, still they never present that unsightly and skeleton-like appearance which is sometimes seen as the result of planting much larger specimens in strong soils.

From having had to operate in different soils in various parts of the country, I may safely state that it is difficult to transplant large specimens in strong soils; but in those which are light and open, especially when the subsoil is of a similar character, I have repeatedly transplanted large shrubs in the middle of summer, and when the weather was a little showery for a week or two they never lost a leaf by the operation. In a soil of this character I a few years ago assisted at the removal of many Oaks from 30 to 45 feet high, and the operation was generally very successful. The trees were cut round at some distance from the stem eighteen months before removal; all the roots which were put forth where they were cut were carefully preserved, as well as the ball of earth; but no practical man would recommend this being done in strong adhesive soils, however desirable it might be to produce an immediate effect. I consider it safest to use young and healthy plants, and these, in the long run, will give the greatest satisfaction.—D.

THE WALNUT TREE.

I MAY in the first place observe that the Walnut is seldom considered as in the list of cultivated fruits, its growth and bearing being generally left to chance. There is an old distich coupling the Walnut with a spaniel and a wife, to the effect that they are all the better for being well beaten. Now, this advice is, I confess, all that I have read about rendering the Walnut tree fruitful; and vulgar though it be, and often regarded as an unmeaning couplet put forth by some sarcastic individual, I am far from denying it some merit, for the beating of the tree with long poles to knock down the fruit in autumn, is never accomplished without breaking off a number of small shoots, thereby effecting a sort of rude pruning, and so rendering the tree more fruitful the following season; and as the rougher the usage the more shoots are broken off, it is not unlikely that a greater proportion of fruit may follow the year after. This,

however, is not always the case, for other influences also operate on the crop. An unfavourable spring is fatal to the setting of the young fruit, or it may be an ungenial autumn refuses to prepare the embryo buds, or other causes may tend to produce a failure similar to that which all other fruit-bearing trees are liable to.

Now, although but little can be said about the proper treatment of the Walnut tree, I fear the severe root-pruning given by some cultivators is the cause of much of the fruit falling at an early stage, and of the remainder being poor and imperfect, as most likely the tree would have borne a fair crop of useful fruit but for that pruning which deprived it of its most important food. It is possible, however, that next season, or the one after that, the tree may be benefited by the operation, especially if it is young and vigorous; but in general we would not advise root-pruning Walnut trees unless they are in that condition, for Nature usually points out when a tree ought to commence bearing, and if it begins to do so when very young, and is allowed to carry heavy crops, it seldom arrives at a great size. To begin bearing early is, in a certain sense, a token of disease or a too early maturity. Pinuses which commence bearing cones early rarely become large trees, and the same may be said of Walnuts. Patience, therefore, must be observed, and the best results will usually follow when the tree has been allowed to have its own way in everything save in the site chosen for it, which ought to be dry, hard, and stony, avoiding the deep, rich, cultivated soils of old gardens, and the damp situations to be met with elsewhere. The most fruitful Walnut trees are very often those occupying a public place on some hard road or thoroughfare, or some dry meadow, the tree receiving no further attention than a good beating when it produces fruit. At all other times letting alone is, perhaps, the best treatment the tree can have.

It may here be remarked, that although there is only one recognised species of fruit-bearing Walnut in general cultivation, the kind called French being only a sort of enlarged English, still, like every other hardy fruit, it differs to a certain extent when raised from seed; the variation takes place in the quality of the fruit, so that certain trees produce better nuts than others similarly placed. This fact is well known amongst the rustics, who have for many years made it a point of duty to taste the produce of all.

A similar sport or variation is observable in the Sweet Chestnut, and other trees also raised from seed. Some are known to produce excellent nuts, others indifferent, and some cast them before they arrive at perfection. Other instances might be given, but in most cases I would advise the Walnut tree to be left alone, and when Nature has done her part by expanding the tree to something like the proportion of a timber tree it will afterwards become less anxious for enlargement, and direct its energies to the production of fruit.—J.



ODONTOGLOSSUMS.

SHADE should be gradually dispensed with for *Odontoglossums*, the blinds being drawn down for a few hours only during bright sunshine. As much light as possible should be admitted, and where the shading is of a permanent nature lose no time in washing the greater portion of it off. It will not be safe to remove all at once or injury may result if bright weather follows. Shading of this nature is not, however, advisable for Orchids. Considerably less moisture will be needed in the atmosphere, and also about the roots of the plant, but on no account allow the atmosphere of the house to become dry, or the soil at the roots of the plants. Press down the moss if it has grown above the base of the pseudo-bulbs. Wash the pots in which the plants are growing, as well as those upon which they are elevated. Slugs can frequently be found when turning over the plants. Wash the glass and woodwork of the structure in which they are grown, and limewash the walls. Do not allow the temperature to fall below 50° at 6 A.M. Artificial heat only will be needed during cold nights for some weeks longer.

CYPRIPEDIUM INSIGNE.

Plants that have been kept in heat are showing their flower spathes. Remove the plants to the *Odontoglossum* or any cool structure, but do not allow cold draughts to strike direct upon the plants. These plants can be retarded for some time, and they will be much more useful some weeks hence than if allowed to come into flower.

CALANTHES.

These need shade no longer unless very bright weather ensues. Do not remove the blinds, but use them only for a few hours when the weather is very warm and bright. Arrange these plants close to the glass, so that their pseudo-bulbs will become thoroughly matured. Supply weak stimulants every time they need water. Free the plants from scale if any exist upon them by means of a sponge with softsoap and water. Do not allow the temperature at night to fall below 65°. Provide a circulation of air daily whenever the weather is favourable.

CÆLOGYNES.

The earliest of these have completed their growth. Place them for a time in a cool house, and expose them to light and a good circulation of air. The plants will then mature their pseudo-bulbs thoroughly, and in due time flower profusely. Frequently when left in heat they start again into growth, and a few flowers only are the result. Keep those warm, close, and moist that are still in active growth, and push them forward as rapidly as possible.

ONCIDIUM INCURVUM.

Although the flowers are small and insignificant individually, this produces long spikes of bloom. It is well worth growing in baskets for cutting purposes; its long arching spikes are very attractive in glasses where light arrangements are required. This plant does much better in the cool house than where a high temperature is maintained. It is a long time unfolding its flower spikes.

PHALÆNOPSIS.

These should be rooting abundantly and throwing up their flower spikes freely. Do not allow any weak plants to flower, pinch off the spikes as soon as they appear, and thus give the plants every chance of gaining strength and establishing themselves. These plants flower so freely that they are frequently weakened considerably by allowing them to flower when they are small. It is a mistake also for the spikes to remain upon the plants too long. Keep these plants shaded from the sun, and be careful that the material about their roots does not become dry. They should be syringed twice daily. Watch for thrips, and if they establish themselves upon the plants sponge with weak tobacco water.—ORCHID GROWER.

WATERING VINES.

A FEW years ago the borders in which Vines are grown were not given the liberal supplies of water that we administer to them now. Well drained borders, it has been said, cannot be easily over-watered, and only recently we noted in these pages from the pen of a well-known cultivator that Madresfield Court was frequently given too little water. Two or three times a day for this Vine grown in pots was thought not to be too much.

I believe that more Grapes have failed to set, stone, colour, and keep well through over-watering than by insufficient supplies. Shanking and pithy wood are certainly the outcome in many cases of wet and therefore cold borders. We all know that Vines require liberal supplies of water, but in many localities and under many conditions the quantity poured upon the borders is far in excess of what is needed. Much depends upon what are termed well-drained borders; a border that some would call well drained is often sadly over-drained, and if the border is composed of light sandy soil, with perhaps a liberal addition of broken bricks or other similar material, it would perhaps be difficult to give too much water. Pouring water on to borders of this nature does little more harm and not much more good than pouring it into a sieve, for it passes through the border almost direct to the drain. Unless the application is repeated at frequent intervals the Vines are certain to suffer by drought. The evils that attend such systems of culture are as great if not greater, than if the Vines were growing in borders insufficiently drained. It cannot be good either for the Vine or the lasting properties of the border to be continually pouring water into it. The same applies to Vines grown in pots, and we cannot help thinking that something is radically wrong when two or three applications are needed daily. Our experience with plant growing in pots tends in the opposite direction. The longer the soil about the roots of the plant can be kept in an intermediate state of moisture without recourse to the water-pot the better. Even that water-loving plant, the Strawberry, when grown in pots can have too much water; the fewer the applications, provided the soil remains moist, the better is the flavour, and the finer the fruits. This we demonstrated during the season of 1889, when some hundreds were plunged to the rim to prevent evaporation, while equal numbers were grown without to test the value of the two systems.

It has been generally believed that red spider on Vines is solely the outcome of drought, or at least when the atmosphere of the structure becomes dry as well as the border the leaves are certain to be attacked. This we do not doubt to be the case, because a check is brought about and the Vines at once become a prey to this particular pest. They are, however, equally liable to an attack when the borders are too wet, and when they can be dried until they are in a normal condition red spider will disappear. This will undoubtedly be questioned, but I have ample proof which need not be entered into just now.

Too generally has water been given to Vines with a free and liberal hand without taking into consideration the drainage of the border and the nature of the soil of which they are composed. One example has been given of where liberal supplies could do little or no harm, and even those in this condition may be over-watered after the decomposition of the fibre. But the soil of which Vine borders are composed varies so widely that much judgment is needed. Where the soil is close and tenacious few applications suffice, the drainage of the border and nature of the soil should be the sole guide in this matter. If instead of adopting a general practice judgment and sound common sense were exercised fewer Vines would be ruined. Well drained borders are necessary, but not over-drained ones, the heavier the soil and the closer it is likely to go together after it has been in the border a few years the more liberal should be the drainage and the less frequent the supplies of water. Borders of this nature need most care or they are sure to become too wet, the Vines flag and fail to grow when they should bear the full force of the sun and be growing luxuriantly.

Shanking may arise from a variety of causes, but is frequently due to a severe check to the Vines, which prevents their bringing up the necessary supplies at the proper time. The lack of suitable food during the stoning period often results through the roots being in wet borders. Active roots are formed in quantity only very late in the season, and these die after the foliage falls, so that there is an insufficiency of active feeders until the mischief has been accomplished. The roots in wet cold borders are naturally late in starting into growth, and shanking follows. This can be largely remedied by careful watering and an increase of surface roots without recourse to lifting. Rich surface dressings are the best means of encouraging roots near the top, and thin mulchings of manure, heavy mulchings when the borders are composed of heavy soil are an evil, and prevent necessary evaporation and warmth. A very thin layer of manure will keep the soil beneath moist for a long time, and the daily sprinklings of the border can be dispensed with.

The supply of water in gardens generally is much better than it used to be, and the evils arising from the overwatering of borders are far more frequent.—W. BARDNEY.

HASSOCKS GATE NURSERY.

BUSINESS took me to Messrs. Balchin & Sons' Nursery some days ago, and I saw much that was both interesting and instructive. The glass houses are well built, well stocked, and are kept as clean and orderly as any gentleman's houses. We find a large span-roof house devoted to *Leschenaultia biloba* major, which is a speciality. Hundreds are grown in all sizes, and no better evidence of the purity of the air of Hassocks and the correctness of the treatment could be afforded than by the fact that they grow like weeds. The next thing that took my attention was the enormous quantity of Palms, *Phoenix reclinata*, *Latania borbonica*, *Scaforthia elegans*, and *Areca lutescens* in large numbers in all sizes, and of *Kentia australis* thousands, and it is surprising how regularly they grow, almost every plant having the same number of leaves. Many of these are sold in a small state for furnishing those small vases and ornaments so troublesome to many gardeners, but the great bulk are grown into plants of 18 inches or 2 feet high. Palms, of course, play an important part in ballrooms, and other decorations undertaken by this firm in Brighton and neighbourhood. About 5000 *Chrysanthemums* are grown. Madame Desgranges, Mrs. Burrell, and George Wermig are largely grown for cutting. The great bulk are such popular sorts as Fair Maid of Guernsey, Lady Selborne, Source d'Or, Peter the Great, James Salter, Hiver Fleuri, Elaine, and the neat little incurved Mrs. Geo. Rundle, Mrs. Dixon, and Geo. Glenny. But all the best are grown in smaller numbers. The plants are good, and they show less signs of loss of bottom leaves than is generally the case this season. A lean-to house is devoted to Tea Roses in pots. Niphetos, Isabella Sprunt, Madame Falcot, and W. A. Richardson are grown in large numbers for cutting. Almost everything that will produce choice flowers, especially white flowers, are grown in quantity. *Eucharis*, *Stephanotis*, *Lilium Harrisii*, *Lapagerias*, white *Azaleas*, *Bouvardias*, and *Tuberoses*. The latter have special attention, and are well grown. Nearly 2000 are now coming on for autumn and winter blooming. They are started in comparatively cool quarters, but are moved into a little warmth as soon as they begin to throw up. A necessary adjunct to their cut-flower business is Maidenhair Fern, *Adiantum cuneatum*, of

which they grow thousands, and never get enough; also useful sorts for decorative purposes, such as *Pteris tremula*, *P. serrulata*, and its crested varieties. Amongst other popular plants well grown were *Erica hyemalis*, *Cyclamen*, *Cinerarias*, *Hydrangea Thos. Hogg* (in a forward stage, and just being placed in their largest pots), and *Solanums*. Roses, fruit trees, hardy herbaceous plants, *Coniferae*, and hardy shrubs are also grown, but my time did not permit a further inspection. The few I have just mentioned, and the fact that the same firm has two large conservatories, and another nursery with a great extent of glass, together with a seed business in Brighton and Hove, will give some slight idea of the nature of the business.—R. I.



EVENTS OF THE WEEK.—To-day (Thursday) the Crystal Palace Hardy Fruit Show will be opened at Sydenham, and it will close on Saturday, October 11th. On Tuesday, October 14th, the Royal Horticultural Society's Committee meetings will be held in the Drill Hall, Westminster, at 12 noon. The following day (Wednesday, October 15th) there will be an Exhibition of fruit and *Chrysanthemums* at the Royal Aquarium, Westminster; the Floral Committee of the National *Chrysanthemum* Society meeting at 12.30 P.M. A meeting will also be held in the Library at 4 P.M. to consider the proposed Holmes memorial, and following this at 5.30 P.M. the British Fruit Growers' Association will hold a Conference on Apples, to be introduced by a paper read by Mr. G. Hammond of Brentwood.

— THE WEATHER IN THE METROPOLITAN DISTRICT has continued fine for the greater part of the past week, Tuesday being the only exception, rain falling heavily during the day. Very slight frosts have been experienced in some districts, but generally the temperature has been high and the atmosphere clear.

— THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—As will be seen on reference to our advertisement columns an addition is to be made to the pension list of this admirable institution, and that candidates must send in their applications to the Secretary on or before November 8th.

— WE regret to announce the death of Mr. WALTER DARKIN, which took place quite unexpectedly at an early hour on Monday in last week. Mr. Darkin was proprietor of "Bell's Weekly Messenger," "Mark Lane Express," and "Farm, Field, and Fireside." He was able, energetic, enterprising, and gained a good position in the newspaper world.

— B. S. WILLIAMS' MEMORIAL.—We are informed that, although a considerable list of promises of contributions has been secured, the total amount promised is still insufficient to carry out the recognition that forms the basis of operations. It is hoped that friends of the movement will renew their efforts to augment the list, the more especially as the Fund will be wholly devoted to the sustenance of the orphans of gardeners and the encouragement of excellence in the cultivation of plants. Those who have promised and not paid are requested to forward their several amounts as early as may be convenient, as the Treasurer desires to advertise all contributions in the order in which they are received. The Chairman of Committee is Mr. Shirley Hibberd, Kew; Treasurer, Mr. H. J. Veitch, 544, King's Road, Chelsea, S.W.

— THE death of a celebrated French author, ALPHONSE KARR, was announced by the London daily papers on October 2nd as having occurred at Saint Raphael on the previous day. M. Alphonse Karr was principally known to amateur horticulturists in this country as the author of a most interesting book, "A Journey Round My Garden," which has been translated into English, but has had a large sale in the original French. M. Karr had for some years engaged in the cultivation of plants, and it is said that he had inscribed over the door of his unpretentious cottage the words, "Alphonse Karr, Gardener." He was the author of several successful works of fiction and dramatic works. He was in his eighty-second year, and his death is due, it is said, to a severe cold contracted by superintending some work in his garden during a recent heavy rainstorm, and refusing to change his clothes for some time afterwards.

— THE total RAINFALL AT CUCKFIELD, Sussex, for September was 0.82 inch, being 2.31 inches under the average. Total for the nine months, 20.79 inches, or 0.52 inch above the average. The heaviest fall was 0.31 inch on the 17th; rain fell on seven days. The highest temperature was 72° on the 10th, lowest 36° on the 1st. Mean shade temperature, 66°; mean night, 49°. Partial shade readings, 3.4° above the average.—R. I.

— AT a recent meeting of the BRITISH FRUIT GROWERS' ASSOCIATION at the Hotel Windsor, Mr. T. Francis Rivers in the chair, twelve members were elected, and it was stated as an indication of the interest taken in the work being performed by the Association that within the past five months the number of members had been increased by seventy additions. It was resolved to contribute a collection of fruits from the members of the Association at the Guildhall Show, also if possible at the Crystal Palace and the Royal Aquarium. At the latter place it was arranged that Mr. G. Hammond of Brentwood should read a paper on "Apple Culture" on October 15th at 5.30 P.M.

— I AM sending you a few varieties of TUBEROUS BEGONIAS gathered from beds outside. The tubers were planted on May 27th, and from that day up to this, October 3rd, they have been our most attractive beds in the flower garden, and have been much admired. I hope to plant largely another season. We suffered severely from winds and rain early in the season, which caused havoc and rank growth among Pelargoniums and Calceolarias. The Begonias have been fresh and bright throughout; I can strongly recommend them to amateurs for bedding out purposes.—ALFRED SKINNER, *Christchurch*. [The flowers sent were as bright and fresh as possible, all of good varieties.]

— THE WEATHER LAST MONTH.—September was the driest month of the year so far, and with the most sunshine. We had four clear days and six others partly so; splendid weather for the harvest, also checking the Potato disease very much (we have the finest crop here that I have seen for several years, and only a very few diseased). Wind was in a westerly direction twenty-two days. Barometer, highest 30.48 at 9 P.M. on the 25th; lowest, 29.66 at 9 A.M. on the 22nd. Total rainfall, 0.68 inch, which fell on ten days, the greatest daily fall being 0.25 inch on the 21st. Highest shade temperature was 79° on the 8th and 9th; lowest, 31° on the 1st; lowest on grass, 29° on 1st; mean temperature of the month, 59.20°. The garden spring ran 13 gallons per minute on the 30th.—W. H. DIVERS, *Ketton Hall, Stamford*.

— LAYERING CARNATIONS.—Mr. F. Hardy, in his excellent paper on the Carnation, says, page 226:—"After the soil is placed round, the layers should have a slight watering, and the business is completed until they are rooted." In showery weather, doubtless, this one watering would be sufficient; but if it should not set in dry (as was the case here this season) I think it is important that the Carnation layers be well attended to in the matter of watering. A mound of light sandy soil soon becomes dry, and the layers do not root so freely as if this is kept moderately moist. Indeed I have reason to believe that I once saw a large number of Carnation layers totally ruined through neglect in this respect, and this is why I am writing this note, and not for the mere sake of picking a hole in Mr. Hardy's paper.—T. S., *Henbury Hill*.

— THE WEATHER DURING SEPTEMBER, 1890.—The weather during the past month here has been delightful, and it has been the driest September in the past three years. The bright sunshine, of which we have had an abundance, has done much in well ripening the wood of our fruit trees, thus giving us the possibility of a crop of fruit next season. The temperature has for the most part remained very steady, the highest point reached by the thermometer being 74° on the 5th; the lowest 33° on the 1st. Rain fell upon six days, against ten of 1889. Maximum in any twenty-four hours 0.10 inch on the 19th; minimum, 0.02 inch on the 3rd; total during the month being 0.39 inch against 2.11 inches of 1889.—E. WALLIS, *The Gardens, Hamels Park, Buntingford, Herts*.

— THE *Kelso Chronicle* says:—"Mr. Archibald M'Kellar, of the gardens at Floors Castle, has been appointed head gardener to their Royal Highnesses the Prince and Princess of Wales at Sandringham, and from what we know of Mr. M'Kellar there is every reason to believe that he will worthily fill this high and important position. Although yet in his prime, he has been in some of the most notable Scottish and English gardens, gaining in his day a large experience, and during his nine years of duty at Floors Castle it is admitted by all those

who ought to know that the well-known and famous gardens there have never been in better order. The loss of Mr. M'Kellar will be felt by their Graces the Duke and Duchess of Roxburghe, but while this is the case they will no doubt be gratified at this his latest advancement."

— EARLY SCOTCH GARDEN LITERATURE.—On page 290, your able contributor, "J. R. S. C.," in one of his interesting and valuable articles on Early English Horticulture, notices Justice's "British Gardeners' Director," and says it was apparently the first standard work of the kind published north of the Tweed. It may be of interest to know that an earlier work, which ran through at least two editions, was written by John Reid, Gard'ner. The second edition, which is in the possession of a friend, and which I have seen, is called "The Scots' Gard'ner," and was published in Edinburgh in 1721. It is, however, chiefly devoted to the laying out of land, and forms somewhat curious reading. If Justice published an edition of his work in 1754 under the title of "The British Gardeners' Director," part of the issue, or a separate edition, was published as "The Scots Gardiners' Director." I saw a copy of this a few days ago, and I have a copy of the second edition of "The Scots Gardiners' Director," published in 1759, and containing the dedication of the first edition. This second edition is of more value to the student of early horticulture than the first, which contains little but cultural directions, while the second gives descriptions and names of many plants.—S. ARNOTT.

— ALLEGED FRAUDS AT A NURSERY.—At Worcester last Wednesday, Edward Ray, a timekeeper in the employ of the well-known firm of Richard Smith & Co., nurserymen and seedsmen, Worcester, of which city Alderman Richard Smith Carington is Mayor, was charged on a warrant with obtaining £10 4s. 6d. by false pretences. The Town Clerk (Mr. S. Southall) prosecuted, and explained that defendant, besides being a timekeeper, was overseer of piecework and had to call over a roll of workmen. At certain periods of the year several extra men were employed, and a separate time book was kept for these. The cash book was made up from the time book. Defendant had at various times called at the office and received money for two men, whose names were given as Hall and Barnes, representing that it would be a convenience to these men to have their money before the ordinary pay time. In this way he received the amount named in the charge. On September 20th defendant took the time book to the office, but before the time for the cash to be arrived the defendant was discharged, for reasons not connected with this case. When the cashier called over the names of Hall and Barnes, no one answering to those names appeared, and consequently the fraud was discovered, as it was found that the men in question had not been employed since March last. Evidence in support of the charge was given, and it was stated that defendant had offered to pay the money back and leave the city if he were not prosecuted. He was committed for trial at the quarter sessions.

— HINTS TO FRUIT GROWERS.—Orchard fruit generally has been a short crop this season, but the care given by growers to greasing and washing has very sensibly diminished the plague of caterpillars and aphides. The trees look far more healthy than for many years, while the heavy rains of the past summer have kept them growing freely, and much wood has been built up, and ripened by the glorious sunshine of the past three weeks. Therefore, subject to the usual "if's" incidental to fruit culture, and without prophesying, we may infer that 1891 will be a fruitful year; foliage is good, buds are plump, wood is ripened, and the roots are in good order—four necessary conditions. In case of a heavy crop only the finest samples can sell freely at a good price, and I venture to suggest to growers that they should at once have their old orchards examined; all crossing boughs should be removed and the heads of the trees be opened so that a man can readily get his head and shoulders between the branches; all dead wood should be cut out, as it can be detected easily now that the leaves are on it. Boughs over 1 inch across should be smoothed over with a sharp knife, and these cuts will partially heal before Christmas. Should old trees be overfull of fruiting spurs they can be thinned from the under boughs, and all prunings should be gathered in a heap and burnt at once to kill eggs of moths, which generally choose loose bark and cankered spots to lay in. By these means trees will still further perfect their growth, and the crop will become larger in size and clearer in the skin than where these precautions is not taken, and growers will secure a better price, while the strain being less on the pruned tree than on one that is not pruned, and consequently full of useless wood and foliage, the chance of a crop in 1892 is enhanced.—GEORGE BUNYARD, *Ma'dstone*.—(*South-Eastern Gazette*).

— THE PORTSMOUTH FLORICULTURAL SOCIETY AND CHRYSANTHEMUM SHOW.—The Portsmouth Chrysanthemum Show is an annual event looked forward to with much interest. From comparatively small beginnings it has grown to be one of the largest Exhibitions in the country, and it owes its development in no small measure to the energy of Councillor F. Power, who has been Honorary Secretary of the Show since its establishment. The organisers of the Show have formed the Portsmouth Floricultural Society, an institution for encouraging the cultivation of fruit and flowers generally, and Chrysanthemums in particular. The Mayor for the time being will be President of the Society, and the first to hold office is Sir William King. The Committee for the first year consists of the Mayor, Alderman G. E. Kent, and Councillors G. Ellis, Ward, Winter, Corke, Barnes, Fulljames, and Power, who will have the assistance of four professional gardeners—namely, Messrs. Penford (Leigh Park), Collins (Waterlooville), Kimber (Borough Asylum), and Hatch (Victoria Park). The first Show under the auspices of the newly formed Society will be held in the Volunteer Drill Hall, Alfred Road, on November 5th, 6th, and 7th, when prizes of the total value of £250 will be offered for exhibits of Chrysanthemums, other flowers, and fruit. Schedules are now ready, and can be obtained from Mr. Power. The principal prizes offered are that known as "The Jubilee," for eight show plants, the total value of this being £22; the challenge vase, valued at £25, and £23 in money prizes for forty-eight cut blooms; and (in the fruit list) £10 for fifty dishes of Apples and Pears.

— AN ECHO FROM GUERNSEY.—TOMATOES FOR PROFIT.—The excellent paper on Tomatoes read at the British Fruit Growers' Brighton Conference has attracted some attention here among Tomato growers, especially as it came from Mr. W. Iggulden, whose practical book on Tomatoes and their culture has had a fairly good sale among the growers. As to the Tomato being overdone, we do not here think there is much chance until the English nation can supply itself with this wholesome vegetable, and the foreign fruit is no longer needed. Prices may fall for early grown fruit, but the demand, increasing as it certainly is among the masses, will provide an outlet for the increased supply. While on the subject of foreign goods it will be news to some of the British fruit growers to learn that the majority of the population of the Channel Islands are English—not foreigners—and I maintain that the constant quoting of Channel Islands produce as foreign is unjust to the growers here, and shows a lack of knowledge of these islands and of the nationality of their inhabitants. As Mr. Iggulden remarks, there are crops produced here that would be an "eye opener" to many smart professional gardeners. I last week saw a span-house 260 feet long 45 feet wide (cool house) that had yielded a crop of 8 tons of Tomatoes, and the plants are showing flower now, so that if heat could be applied there would be fruit until Christmas. The variety usually grown is a good strain of Large Red. The Perfection and other kindred varieties do not meet with much attention from growers for profit, and only a few have persevered in keeping one or more small houses especially for this variety. The Cladsporium has created great havoc and loss here, as on the mainland, and as yet we have not discovered any really effective means of checking its ravages. Medium sized houses properly heated, with careful attention to culture, will as a rule insure a fair crop if not a heavy one, and the fruit in this case will swell up to full size. The output next year from this island will be enormously increased, as more houses are being erected than has ever been known before at one time, and consequently builders and timber merchants are working at high pressure. As these houses will be utilised for growing Tomatoes it is to be hoped the British public will favour fruit grown by British subjects, and in an island free from cholera and contagious diseases.—SARNIAN.

THE GUILDHALL FRUIT SHOW.

OCTOBER 6TH, 7TH, AND 8TH.

THE history and scope of the remarkable Exhibition of fruit organised under the direction of the Fruiterers' Company in the Guildhall, London, this week are dealt with in the article on page 305, and it is therefore unnecessary here to refer to the origin of the gathering. It will be necessary, however, to describe as briefly as possible the general characters of the Show, and to give particulars of the more important exhibits. In a display of such magnitude and comprising so much that is noteworthy it is difficult to make a selection of the more important, and a detailed report would require a large portion of the Journal to do the matter full justice. With regard to the positions taken by the successful competitors, the official list of awards appended to these remarks supplies all the information needed, and we will endeavour to give a general review of the Show

as likely to be of most interest to our readers. To give the names of all the varieties shown in the prizewinning collections would involve the repetition of many familiar names, as except in the trade and large collections the varieties represented were not very numerous. It was, however, a subject of common remark amongst the experienced fruit growers present on the three days that few could have expected in a season like the present to see so large a number of entries and such good even quality as characterised the Show under notice. It is true that nearly all the best fruits staged were from private gardens, and that they were selections in many cases from numerous trees, and consequently could not be taken as average samples, yet they proved that even in a season of general scarcity there is still plenty of good fruits to be obtained in England. In size and colour the majority of the Apples shown left little to be desired, and though the Pears were necessarily wanting in the tints which render the Apples so attractive, some extremely fine fruits were included, especially from the south-eastern gardens.

The classification of the exhibits in geographical districts was instructive and interesting; it was also fairer for the competitors to have only to contend with the contributions from growers working under the same climatal conditions. Until the principle adopted was thoroughly understood it was, however, somewhat perplexing to visitors, and even to experienced showmen, for the same class numbers were repeated three times, and after seeing the prizes and entries in a certain class at one part of the Show it was rather puzzling to find the same class repeated in other widely separated apartments. Perhaps a word of explanation may be useful as indicating the plan followed in the arrangements.

The first section, comprising six classes, was appropriated to cottagers, defined as "persons of the working class who do not employ professional assistance or paid labour in the cultivation of their gardens or allotments." The exhibits in each of these classes were then classified in three "zones" as follows:—

(1) Northern Zone.—The Counties of Northumberland, Cumberland, Westmoreland, Durham, Yorkshire, Lancashire, Cheshire, Derbyshire, Nottinghamshire, Lincolnshire, Staffordshire, Shropshire, Leicestershire, Rutland, Flint, Denbighshire, Carnarvonshire, Anglesea, Merionethshire, Montgomeryshire, Cardiganshire, and Radnorshire. (2) South-Western Zone.—The Counties of Cornwall (and Scilly Islands), Devon, Somerset, Dorset, Wilts, Gloucestershire, Monmouthshire, Herefordshire, Worcestershire, Warwickshire, Pembrokeshire, Carmarthenshire, Glamorgan-shire, and Brecknockshire. (3) South-Eastern Zone.—The Counties of Hants (and Isle of Wight), Sussex, Kent, Surrey, Berkshire, Middlesex, London, Essex, Norfolk, Suffolk, Cambridgeshire, Huntingdonshire, Northamptonshire, Bedfordshire, Buckinghamshire, Oxfordshire, and Hertfordshire.

This system was applicable to sections 1 to 4, thus increasing the nominal number of classes (19) to 57, as prizes of equal value were offered for exhibits staged from the respective "zones." There was a great difference not only in the number of entries in each class but in the divisions of those classes also, except in the cottagers' and tenant farmers' sections, neither of which were largely represented. In the amateurs' and gardeners' section, especially from the south-eastern zone, the competition was extraordinary, reaching as many as forty-four in one class, and the quality all round was superior there to either of the other geographical districts, though nearly equally fine examples were staged by some exhibitors in smaller numbers from the south-west and north.

It will not be necessary to take the classes in the order of the schedule, as prominence must be given to the gold medal class as the great feature of interest in the Exhibition. This was for "a collection of fruit, to consist of thirty varieties of Apples and twenty varieties of Pears, five specimens of each," and were to be shown only by amateurs or gardeners in the United Kingdom, the prizes consisting of a gold medal, a silver-gilt medal, and a silver medal, without money prizes. The twelve exhibits in this class, comprising 600 dishes of fine fruits, occupied two tables 6 feet wide, extending from the dais at the end to the centre of the Great Hall, and constituted one of the most handsome classes of competitive fruit ever seen in England. The remaining two tables, extending from the centre to the opposite end of the hall, with some side tables, were occupied with the trade exhibits, and the table across the hall above the dais, shown as the extreme boundary in the engraving (fig. 36) was occupied with the 300 dishes of fruit from the British Fruit Growers' Association. To these exhibits we shall have to refer again, but returning now to the fruit class, it must be said that the gold medal was well and easily won by Mr. G. Woodward, gardener to Roger Leigh, Esq., Barham Court, Maidstone, who had magnificent Apples both in size and colour, fully equal to the Barham Court records of previous years. The varieties were as follows:—Apples: Warner's King, Alexander, Claygate Pearmain, Belle Dubois, Royal Russet, Yorkshire Beauty, Stone's, Golden Spire, Cox's Orange Pippin, Brabant Bellefleur, New Hawthornden, The Queen, Flower of Kent, Bismarck, Ribston Pippin, Northern Greening, Minchull Crab, Gascoigne's Scarlet, Peasgood's Nonesuch, Lady Henniker, Alfriston, Lord Derby, Mère de Ménage, Reinette de Canada, Cox's Pomona, Grenadier, Washington, Tower of Giamis, Bedfordshire Foundling, and Calville Malingle. The Pears also were very fine, but, of course, owing to the want of colour they did not form so bright a part of the exhibit. The varieties were General Todtleben, Emile d'Heyst, Marie Louise, Doyenné de Mersode, Easter Beurré, Brown Beurré, Doyenné du Comice, Louise Bonne of Jersey, Hacon's Incomparable, Pitmaston Duchess, Vineuse, Glou Morceau, Catillac, Beurré Hardy, Doyenne d'Alençon, Beurré Diel,

Conseiller du Cour, Beurré Superfin, Nouveau Poiteau, and Marie Benoist. The second honour — the silver-gilt medal — was accorded to Mr. Davies, The Mote Park, Maidstone, who had

Waltham Abbey, Dumelow's Seedling, Bismarck, Melon Apple, Cox's Orange Pippin, Warner's King, Fearn's Pippin, Mère de Ménage, Blenheim Pippin, Cobham's Pearmain, Summer Thorle, Cox's Pomona, Lord



FIG. 36.—THE GUILDHALL FRUIT SHOW.

handsome fruits, especially amongst the Apples. The varieties were—Apples: Peasgood's Nonesuch, Queen Caroline, Worcester Pearmain, Gloria Mundi, Gascoigne's Scarlet, American Mother, Stone's,

Derby, Alexander, Ecklinville, Ribston Pippin, Alfriston, King of the Pippins, Lord Suffield, The Queen, Lemon Pippin, and an unnamed variety. The Pears were Doyenné du Comice, Emile d'Heyst, Comte de

Flandres, Durondeau, Beurré Hardy, Brown Beurré, Beurré Clairgeau, Hacon's Incomparable, General Todtleben, Pitmaston Duchess, Urbaniste, Beurré Diel, Colmar d'Été, Beurré Bachelier, Doyenné Boussoch, Glou Morceau, Marie Louise, Marie Louise d'Uccle, and two or three unnamed varieties. Both these were Kentish exhibitors, and it showed the necessity of the zone system, for if that plan had been adopted in this class it would have given several other exhibitors places in the competition. For instance, Mr. Goodacre, Elvaston Castle Gardens, Derby, was awarded the silver medal for a good collection, and S. Barlow, Esq., Stakehill House, Middleton, had an extra prize for fine fruits, including exceedingly large and handsome Peasgood's Nonesuch, probably the finest dish of Apples in the Show. Both these were northern exhibitors, and with Mr. J. McIndoe, Guisborough Hall Gardens, Yorks, could scarcely be expected to compete on equal terms with the Kentish fruit. Other competitors who showed meritorious collections were Mr. Cummins, gardener to A. H. Smee, Esq., Wallington; Mr. G. Reynolds, gardener to the Messrs. Rothschild, Gunnersbury Park; Mr. T. Turton, Maiden Erleigh; Mr. J. C. Dean, Titsey Place Gardens, Limsfield; Mr. J. Nicholson, gardener to W. Melles, Esq., Sewardston Lodge, Chingford; Mr. J. Rose, gardener to Lord Wantage, Lockinge Park, Wantage; and Mr. W. Dance, Gosfield Hall Gardens, Halstead.

Referring briefly to the remaining exhibits in the Great Hall, it may be said that the general quality was satisfactory, though in the majority of cases not less than fifty dishes were shown by each exhibitor. As already stated, the table on the dais was devoted to the British Fruit Growers' Association (Hon. Sec., Mr. Lewis Castle). About 300 dishes were staged from thirty exhibitors and fifteen counties in the following zones:—Northern.—Northumberland, Cheshire, Salop, and Lincoln. South-Western.—Wilts, Gloucester, Hereford, and Worcester. South-Eastern.—Surrey, Sussex, Kent, Middlesex, Bucks, Essex, and Herts. The principal exhibitors were the following:—Mr. G. Harris, Alnwick Castle Gardens, Northumberland, who sent representative northern fruits from Alnwick; also from Messrs. D. Inglis, Howick Hall; R. Henderson, Chillingham Castle; J. Thompson, Shawdon Hall; and A. Burgess, Doxford Hall. Other northern exhibitors were Brownlow Tower, Esq., Ellesmere; Messrs. Dicksons of Chester; and Mr. W. H. Divers, Ketton Hall Gardens, Stamford. From the south-western zone the contributors were Mr. H. W. Ward, Longford Castle Gardens, some fine Pears; Mr. G. Cole, Evesham, orchard and local Apples; English Fruit and Rose Company, Hereford, and Messrs. Jefferies & Son, Cirencester. The south-eastern zone included exhibits from Mr. G. Hammond, Brentwood; Mr. Goaring, gardener to J. W. C. Tower, Esq., Weald Hall, Brentwood, an excellent collection; Mr. W. Roupell, Brixton; Mr. E. Butts, Streatham Hill, and others showing suburban garden fruit; Mr. R. Smith, Yalding, orchard fruit; Mr. C. Herrin, Dropmore Gardens, Maidenhead; Mr. C. Goldsmith, gardener to W. Waterlow, Esq., Redhill; Mr. R. Merritt, Harpenden; Mr. A. F. Brown, Chertsey; Miss Flintoff, Mitcham; Messrs. Cheal & Son, Crawley, cottagers' fruit; and Mr. W. Butts, Poulett Lodge Gardens, Twickenham. The object of the collection was to show fair average fruits from private gardens, orchards, market gardens, and cottage gardens in the principal districts of England under good cultivation. Samples were also staged from neighbouring orchards to show the effects of attention and neglect in the culture of trees. Mr. Smith of Yalding stated that in his district this season, "Thirty bushels of Apples had been taken from one tree of Northern Greening, and twenty bushels from one tree of Blenheim Pippin. The produce of six standard trees of Colonel Vaughan variety in the same district had realised £20." Mr. Herrin also stated, as showing how the crops vary in different places, that at Dropmore they have "the best crop of orchard Apples secured for some years."

Mr. Harris's collection was very interesting, coming from the extreme north of England, and a statement accompanying the fruit was to the following effect:—"Pears are very scarce in this district, except those sent, which are mostly cropped heavily, all of which are good here. The choice Pears do not succeed in the open in this climate except on walls, therefore we have not so many varieties as more favoured places in the south. Of Apples I have sent only one dish of a variety, all of which are among the best to produce good crops. Mr. Inglis speaks highly of Peck's Pleasant and Queen Caroline, and Mr. Henderson of Chillingham knows nothing so delicate when cooked as Carlisle Codlin. Speaking generally, the largest fruit are from the Paradise stock, and from trees planted from two to eight years. If fairly sheltered, with good land, useful marketable fruit can be grown on the Paradise stock. Several of the varieties begin to fruit the first year after planting. We have had several of the varieties which are sent from trees planted in 1888, bearing from 3 dozen to 3½ dozen fruits. This was a very unfavourable spring. One friend reports 27° frost in March, 17° in April, with cold winds after setting."

The framed certificate of the Fruiterers' Company was awarded for this exhibit, and several awards of merit were granted for the fruits shown.

A similar recognition was accorded to the Royal Horticultural Society for a collection of fifty dishes of fruits from the Chiswick Garden. These comprised some excellent Apples and Pears, together with Aubergines, fruits of the Tree Tomato and Currant Tomatoes, which attracted much attention. The trade exhibitors contributed largely to the beauty of that portion of the Exhibition in the Great Hall, as the majority displayed considerable taste in the arrangement, highly coloured varieties being placed in imposing mounds, or disposed on dishes with a garnishing of suitable leaves. We cannot particularise

these exhibits in the present issue, but the names of the exhibitors, with the awards granted, are given in the official prize list at the end of these notes.

From a cultural and competitive point of view perhaps the most interesting section of the Show was that formed by the exhibits from the south-eastern zone, which were arranged in the art galleries, first entered from the road. Here there were some cottagers' and tenant farmers' exhibits, but they do not call for special mention. In the amateurs' and gardeners' section, however, the competition was extraordinary, and it is doubtful if it has ever been equalled before at any exhibition. The first class of the section was for twelve dishes of dessert Apples, distinct varieties, five fruits in each dish, and the twenty collections staged were of high merit throughout, rendering the judging extremely difficult, as after the first two were passed there were seven or eight of nearly equal value. Mr. G. Woodward succeeded in gaining the first prize with bright and beautiful fruits of the following:—Worcester Pearmain, Queen, Cox's Orange Pippin, Colonel Vaughan, Wealthy, Cox's Pomona, Washington, Calville Rouge Précoce, Mabbot's, Braddick's Nonpareil, American Mother, and Ribston Pippin. Mr. J. Turner, gardener to R. W. Combe, Esq., Pierrepont, Farnham, was placed second, being only a few points behind the first. His varieties were American Mother, Cellini, Worcester Pearmain, King of the Pippins, Cox's Pomona, Claygate Pearmain, Emperor Alexander, Duke of Devonshire, Baumann's Red Reinette, Wyken, Cox's Orange Pippin, and Kerry Pippin. Mr. A. Waterman, gardener to H. A. Brassey, Esq., Preston Hall, Aylesford, was a good third, staging fine fruits of Cox's Orange Pippin, Wealthy, Herefordshire Pearmain, Washington, Ribston Pippin, Worcester Pearmain, Queen, Gravenstein, Blenheim Pippin, Peasgood's Nonesuch, King of the Pippins, and Cellini. Mr. T. Turton was placed fourth, and an extra prize was adjudged to Mr. F. Miller, gardener to J. J. Friend, Esq., Northdown, Margate.

The next class, for twelve dishes of cooking Apples, distinct varieties, was the most remarkable in the Show as regards the competition, for there were forty-four entries, and of these no less than forty exhibitors staged their fruits. The majority of the Apples were of great size, fine, clean, even samples, and this especially applies to Mr. Woodward's premier collection, which comprised the under-mentioned varieties:—Gascoigne's Scarlet, Emperor Alexander, Golden Spire, Warner's King, Stone's, Belle Dubois, Peasgood's Nonesuch, Cox's Pomona, Lord Derby, Brabant Bellefleur, Annie Elizabeth, and Flower of Kent.

The northern and south-western exhibits were included in the Council Chamber, reached from the Great Hall by the corridor, where the Grapes, Tomatoes, and some miscellaneous exhibits were staged. Cottagers, tenant farmers, amateurs, and gardeners were again represented here under the two zones, and in each of the eighteen classes provided in the schedule. The exhibits were not so numerous, however, as in the other section, and they were as regards the northern Apples, with few exceptions, deficient in both size and colour.

Passing the cottagers' and tenant-farmers' exhibits in both the northern and south-western sections, which, however, included some fine fruits that cannot be referred to this week, we come to the amateurs' and gardeners' contributions from the northern counties, and there the leading exhibitors were Mr. Crawford of Coddington Hall Gardens and Mr. Ingram of Belvoir Castle Gardens with Apples, and Mr. Hunter of Lambton Castle Gardens with Pears, all three showing extremely handsome fruits. In the corresponding classes of the south-western zone Mr. S. T. Wright, Gleaston Court Gardens; Mr. T. Parker, Moreton Court Gardens, Hereford; and Mr. W. Iggulden, Marston Gardens, Frome, were the leading prizewinners, and some of these exhibits ran the Kentish Apples and Pears closely in point of merit.

Suburban fruits were not largely shown in the class specially provided for them, but Mr. Roupell took the lead with twelve dishes of capital Apples, Sir James Whitehead, Bart., being second with slightly smaller but very good specimens.

The Grapes were not very numerous, but some fine bunches were staged. For six bunches of black Grapes, distinct varieties, Mr. Allan, Gunton Park Gardens, Norfolk, was placed first, showing Black Hamburg, Gros Maroc, Alnwick Seedling, Alicante, and Lady Downe's, good in size of bunch and berry, and of excellent colour. Mr. J. Reynolds was second with Lady Downe's, Alnwick Seedling, Mrs. Pince, Black Hamburg, and Gros Maroc, especially fine. Mr. Iggulden, gardener to the Earl of Cork, Marston House, Frome, following with Black Hamburg, Gros Maroc, Gros Guillaume, Alicante, Lady Downe's, and Gros Colman, notable for their excellent colour. An extra prize was awarded to Mr. Goodacre for three bunches of Gros Guillaume and the same number of Gros Colman, much the largest bunches in the Show, but he was excluded owing to his not having the requisite number of distinct varieties.

In the white Grape class Mr. Crawford won first honours with good examples of Golden Queen, Muscat of Alexandria, Mrs. Pearson, and Royal Vineyard. Mr. Iggulden was second, showing Muscat of Alexandria, Foster's Seedling, Mrs. Pearson, and Golden Queen in capital condition. An extra prize was again accorded to Mr. Goodacre for extremely large bunches of White Tokay and Muscat of Alexandria.

The exhibits of jams, bottled fruits, and jellies were notable in one portion of the Council Chamber, Mrs. Smee of The Grange, Wallington, being very successful in three of the classes, taking first honours for admirable examples of well-prepared jams, jellies, and whole fruit. Amongst the non-competing exhibits Messrs. T. W. Beach & Sons had a

notable collection, well staged and effective. The other exhibitors are noted in the prize list.

Mr. J. Reynolds contributed twenty-four fine Melons, beautifully netted, for which a framed certificate was awarded. Messrs. J. Carter and Co., High Holborn, also sent a collection of fine Tomatoes, for which awards of merit were granted. The Tomato classes were not, however, well represented. Mr. J. Clarke of Farnham had thirty bunches of Grapes grown without fire heat, and was awarded a framed certificate. There were also several other meritorious exhibits, which must be passed for the present.

There was a large attendance of visitors on each of the three days, the galleries, rooms, and Great Hall being crowded from morning to evening. The following is the official list of the awards as supplied to us by the manager of the Show.

AWARDS OF THE JUDGES.

SECTION I.—COTTAGERS.—NORTHERN ZONE.

Class 1.—Three dishes of five cooking Apples, one variety in each dish.—First, 30s., John Wilson, Latham, Ormskirk. Second, 20s., John Cope, Hermitage, Rugeley, Staffordshire. Third, 15s., R. Heard, Freshfield, Formby, Lancashire. Fourth, 10s., J. S. Baron, Leyland, Lancashire.

Class 2.—Single dish of five cooking Apples.—First, 15s., T. J. Pullett, 82, Russell Street, Loughborough. Second, 10s., J. S. Baron, Leyland, Lancashire. Third, 7s., G. Berrington, Julian Road, Ludlow, Shropshire. Fourth, 5s., C. Leeson, Melton Road, Wrawby, Brigg, Lincolnshire; R. Weatherell, Skelton, Penrith, Cumberland.

Class 3.—Three dishes of five dessert Apples, one variety in each dish.—First, 30s., T. J. Pullett, 82, Russell Street, Loughborough. Second, 20s., J. S. Baron, Leyland, Lancashire. Third, 15s., J. Cope, Hermitage, Rugeley, Staffordshire. Fourth, 10s., R. Weatherell, Skelton, Penrith, Cumberland.

Class 4.—Single dish of five dessert Apples.—First, 15s., T. J. Pullett, 82, Russell Street, Loughborough. Second, 10s., J. S. Baron, Leyland, Lancashire. Third, 7s., J. Weatherell, Skelton, Penrith, Cumberland. Fourth, 5s., R. Weatherell, Skelton, Penrith, Cumberland.

Class 5.—Three dishes of other hardy fruit (which may include Pears, Medlars, Quinces, Nuts, Walnuts, Plums, Damsons, and any other hardy fruit not named above), one variety in each dish.—First, 15s., R. Weatherell, Skelton, Penrith, Cumberland.

Class 6.—Two dishes of five Tomatoes, one variety in each dish.—First, 15s., withheld. Second, 10s., C. Leeson, Melton Road, Wrawby, Brigg, Lincolnshire.

SECTION I.—COTTAGERS.—SOUTH-WESTERN ZONE.

Class 1.—Three dishes of five cooking Apples, one variety in each dish.—First, 30s., John Copp, Brimley, Tainmouth. Second, 20s., Allan Williams, Bodenham, Leominster. Third, 15s., H. J. Hooper, East Coker, Yeovil. Fourth, 10s., Wm. Yates, 15, Whitefriars Street, Coventry.

Class 2.—Single dish of five cooking Apples.—First, 15s., A. Williams, The Moor, Bodenham, Leominster. Second, 10s., S. French, Marstow, Herefordshire. Third, 7s., W. Yates, 15, Whitefriars Street, Coventry. Fourth, 5s., H. J. Hooper, East Cottage, East Coker, near Yeovil.

Class 3.—Three dishes of five dessert Apples, one variety in each dish.—First, 30s., S. French, Marstow, Herefordshire. Second, 20s., A. Williams, The Moor, Bodenham, Leominster. Third, 15s., W. Yates, 15, Whitefriars Street, Coventry. Fourth, 10s., H. J. Hooper, East Cottage, East Coker, near Yeovil.

Class 4.—Single dish of five dessert Apples.—First, 15s., S. French, Marstow, Herefordshire. Second, 10s., A. Williams, The Moor, Bodenham, Leominster. Third, 7s., H. J. Hooper, East Cottage, East Coker, near Yeovil. Fourth, 5s., W. Yates, 15, Whitefriars Street, Coventry.

Class 5.—Three dishes of other hardy fruit (which may include Pears, Medlars, Quinces, Nuts, Walnuts, Plums, Damsons, and any other hardy fruits not named above), one variety in each dish.—No competition.

Class 6.—Two dishes of five Tomatoes, one variety in each dish.—First, 15s., W. Yates, 15, Whitefriars Street, Coventry. One competitor only.

SECTION I.—COTTAGERS.—SOUTH-EASTERN ZONE.

Class 1.—Three dishes of five cooking Apples, one variety in each dish.—First, 30s., Wm. Jacob, High Street, Petworth. Second, 20s., W. Waghorn, Allington, Maidstone. Third, 15s., Hy. Newman, 2, Ocklinge Road, Eastbourne. Fourth, 10s., J. Fasham, Northdown, Margate.

Class 2.—Single dish of five cooking Apples.—First, 15s., W. Jacob, High Street, Petworth. Second, 10s., W. Pulling, Hill Top, Tillington, Petworth, Sussex. Third, 7s., J. Ewer, Woolmer Green, Steyning. Fourth, 5s., W. Waghorn, Allington, near Maidstone, F. Marsh, The Bow, Nettlestead, Maidstone.

Class 3.—Three dishes of five dessert Apples, one variety in each dish.—First, 30s., W. Pulling, Hill Top, Tillington, Petworth, Sussex. Second, 20s., W. Waghorn, Allington, near Maidstone. Third, 15s., W. Jacob, High Street, Petworth.

Class 4.—Single dish of five dessert Apples.—First, 15s., G. Baynes, East Street, Rochford, Essex. Second, 10s., W. Jacob, High Street, Petworth, Sussex. Third, 7s., J. Sheppard, Wolverstone Park, Ipswich. Fourth, 5s., G. Phillips, Moleside Cottage, Brookham Green, Surrey.

Class 5.—Three dishes of other hardy fruit (which may include

Pears, Medlars, Quinces, Nuts, Walnuts, Plums, Damsons, and any other hardy fruits not named above), one variety in each dish.—No competition.

Class 6.—Two dishes of five Tomatoes, one variety in each dish.—First, 15s., W. F. Breach, Gubert House, Eastbourne. Second, 10s., Jno. Mudge, 8, Kingswood Road, Penge, Surrey. Third, 7s., H. A. Grimrod, St. Stephens, Tunbridge, Kent.

SECTION II.—TENANT FARMERS, NORTHERN ZONE.

Class 7.—Six dishes of five cooking Apples, one variety in each dish.—First, 40s., J. Doncaster, Halloughton, Southwell, Nottinghamshire.

Class 8.—Three dishes of five cooking Apples, one variety in each dish.—No award.

Class 9.—Three dishes of five table Apples, one variety in each dish.—First, 20s., J. Doncaster, Halloughton, Southwell, Nottinghamshire.

Class 10.—Three dishes of five Pears, one variety in each dish.—No competition.

Class 11.—Three dishes of other hardy fruit (which may include Quinces, Medlars, Plums, Damsons, Nuts, or Walnuts, or any other hardy fruit not named above), one variety in each dish.—No competition.

SECTION II.—TENANT FARMERS, SOUTH-WESTERN ZONE.

Class 7.—Six dishes of five cooking Apples, one variety in each dish.—First, 40s., J. Davies, Bunhill, Bodenham, Leominster. Second, 30s., W. Morgan, Denmore, Hereford. Third, 20s., J. Hyde, Calderwell, Bodenham, Leominster.

Class 8.—Three dishes of five cooking Apples, one variety in each dish.—First, 20s., J. Davis, Bunhill, Bodenham, Leominster. Second, 15s., W. Morgan, Denmore, Hereford. Third, 10s., J. Hyde, Calderwell, Bodenham, Leominster.

Class 9.—Three dishes of five table Apples, one variety in each dish.—First, 20s., J. Davies, Bunhill, Bodenham, Leominster. Second, 15s., J. Hyde, Calderwell, Bodenham, Leominster. Third, 10s., W. Helyar, East Coker, near Yeovil.

Class 10.—Three dishes of five Pears, one variety in each dish.—First, 20s., J. Davis, Bunhill, Bodenham, Leominster.

Class 11.—Three dishes of other hardy fruit (which may include Quinces, Medlars, Plums, Damsons, Nuts, or Walnuts, or any other hardy fruit not named above), one variety in each dish.—No competition.

SECTION II.—TENANT FARMERS, SOUTH-EASTERN ZONE.

Class 7.—Six dishes of five cooking Apples, one variety in each dish.—First, 40s., R. Webb, Beenham, near Reading, Berks. Second, 30s., R. Cawthorn, The Grove, Fordham, near Soham.

Class 8.—Three dishes of five cooking Apples, one variety in each dish.—First, 20s., R. Webb, Beenham, near Reading, Berks. Second, 15s., H. Manser, Omers Farm, Northdown, Margate. Third, 10s., R. Cawthorn, The Grove, Fordham, near Soham. Extra, W. Bull, Bishops Ramsden, Billericay, Essex.

Class 9.—Three dishes of five table Apples, one variety in each dish.—First, 20s., R. Webb, Beenham, near Reading, Berks. Second, 15s., R. Cawthorn, The Grove, Fordham, near Soham. Third, 10s., W. A. Medhurst, Chobham Farm, Chobham, Surrey.

Class 10.—Three dishes of five Pears, one variety in each dish.—No awards.

Class 11.—Three dishes of other hardy fruit (which may include Quinces, Medlars, Plums, Damsons, Nuts or Walnuts, or any other hardy fruit not named above), one variety in each dish.—First, 20s., W. W. Bull, Bishops Ramsden, Billericay, Essex. Second, 15s., R. Cawthorn.

SECTION III.—AMATEURS AND GARDENERS, NORTHERN ZONE.

Class 12.—Twelve dishes of five dessert Apples, one variety in each dish.—First, 40s., Mr. J. Crawford, gardener to Colonel Thorpe, Coddington Hall, Newark-on-Trent. One exhibitor only.

Class 13.—Twelve dishes of five cooking Apples, one variety in each dish.—First, 40s., Mr. W. Ingram, gardener to the Duke of Rutland, Belvoir Castle, Grantham. Second, 30s., Mr. H. Price, gardener to B. C. Roberts, Esq., Oldfield, Upton, Chester. Third, 20s., not awarded.

Class 14.—Three dishes of five cooking, and three dishes of five dessert Apples, one variety in each dish.—First, 30s., Samuel Barlow, Esq., J.P., Stakehill House, Castleton, Manchester. Second, 20s., Mr. H. Price, gardener to B. C. Roberts, Esq., Oakfield, Upton, Chester. Third, 10s., not awarded.

Class 15.—Twelve dishes of five Pears, one variety in each dish.—First, 40s., Mr. James Hunter, gardener to the Earl of Durham, Lambton Castle, Durham. Second, 30s., Mr. William Ingram, gardener to the Duke of Rutland, Belvoir Castle, Grantham. Third, 10s., Mr. John Crawford, gardener to Colonel Thorpe, Coddington Hall, Newark-on-Trent.

Class 16.—Six dishes of five dessert Pears, one variety in each dish.—First, 30s., Mr. James Hunter, gardener to the Earl of Durham, Lambton Castle, Durham. Second, 20s., Samuel Barlow, Esq., J.P., Stakehill House, Castleton, Manchester. Third, 10s., Mr. John Crawford, gardener to Colonel Thorpe, Coddington Hall, Newark-on-Trent.

Class 17.—Six dishes of five cooking Pears, one variety in each dish.—First, 30s., withheld. Second, 20s., Mr. Jno. Crawford, gardener to Col. Thorpe, Coddington Hall, Newark-on-Trent. Third, 10s., not awarded.

Class 18.—Six dishes of other hardy fruit (as in class 11), one variety in each dish.—No entry.

SECTION III.—AMATEURS AND GARDENERS, SOUTH-WESTERN ZONE.

Class 12.—Twelve dishes of five dessert Apples, one variety in each dish.—First, 40s., Mr. S. T. Wright, gardener to C. Lee-Campbell, Esq., Glewston Court, Hereford. Second, 30s., Mr. T. Parker, gardener to Mrs. Evans, Moreton Court, Hereford. Third, 20s., Mr. S. Kidley, gardener, East Coker, Yeovil.

Class 13.—Twelve dishes of five cooking Apples, one variety in each dish.—First, 40s., Mr. Thos. Parker, gardener to Mrs. Evans, Moreton Court, Hereford. Second, 30s., Mr. S. T. Wright, gardener to C. Lee-Campbell, Esq., Glewston Court, Hereford. Third, 20s., Mr. S. Kidley, gardener, East Coker, Yeovil.

Class 14.—Three dishes of five cooking, and three dishes of five dessert Apples, one variety in each dish.—First, 30s., Mr. S. T. Wright, gardener to C. Lee-Campbell, Esq., Glewston Court, Hereford. Second, 20s., Mr. W. Iggulden, gardener to the Earl of Cork, Marston, Frome. Third, 10s., Mr. Thos. Parker, gardener to Mrs. Evans, Moreton Court, Hereford.

Class 15.—Twelve dishes of five Pears, one variety in each dish.—First, 40s., Mr. W. Iggulden, gardener to Earl of Cork, Marston, Frome. One competitor only.

Class 16.—Six dishes of five dessert Pears, one variety in each dish.—First, 30s., Mr. W. Iggulden, gardener to Earl of Cork, Marston, Frome. Second, 20s., Thos. Parker, gardener to Mrs. Evans, Moreton Court, Hereford. Third, 10s., Mr. S. T. Wright, gardener to C. Lee Campbell, Esq., Glewstone Court, Hereford.

Class 17.—Six dishes of five cooking Pears, one variety in each dish.—No competition.

Class 18.—Six dishes of other hardy fruit (as in Section II.) one variety in each dish.

SECTION III.—AMATEURS AND GARDENERS, SOUTH-EASTERN ZONE.

Class 12.—Twelve dishes of five dessert Apples, one variety in each dish.—First, 40s., George Woodward, gardener to R. Leigh, Esq., J.P., Barham Court, Maidstone. Second, 30s., Mr. J. Turner, gardener to R. H. Coombe, Esq., Pierrepont, Farnham, Surrey. Third prize, 20s., Mr. A. Waterman, gardener to H. A. Brassey, Esq., Preston Hall, Aylesford, Kent. Fourth, T. Turton. Extra, Mr. F. Miller, gardener to J. J. Friend, Esq., Northdown, Margate.

Class 13.—Twelve dishes of five cooking Apples, one variety in each dish.—First, 40s., Mr. G. Woodward, gardener to R. Leigh, Esq., J.P., Barham Court, Maidstone. Second, 30s., Mr. W. S. Skinner, farmer, Beresford, Boughton, Kent. Third, 20s., Mr. C. Ross, gardener to Col. Eyre, Welford Park, Newbury. Fourth, Mr. F. Bridger, Penshurst Place, Kent. Extra, Mr. A. Waterman, gardener to A. H. Brassey, Esq., Preston Hall, Aylesford.

Class 14.—Three dishes of five cooking, and three dishes of five dessert Apples, one variety in each dish.—First, 30s., Mr. F. Bridger, The Gardens, Penshurst Place, Kent. Second, 20s., Mr. T. Turton, gardener to Jno. Hargreaves, Esq., Maiden Erleigh, Reading. Third, 10s., Mr. E. H. Caterer, gardener to Thos. Arnall, Esq., Brookside, Heddington Hill, Oxford. Fourth, Mr. C. F. Prangnell, Holloway Gardens, Virginia Water, Surrey. Extra, Mr. W. Goaring, gardener to C. J. H. Tower, Esq., Weald Hall, Brentwood. Extra, Mr. A. Waterman, gardener to A. H. Brassey, Esq., Preston Hall, Aylesford.

Class 15.—Twelve dishes of five Pears, one variety in each dish.—First, 40s., Mr. Geo. Woodward, gardener to R. Leigh, Esq., J.P., Barham Court, Maidstone. Second, 30s., Mr. Chas. Blick, gardener to Martin A. Smith, Esq., Hayes Common, Hayes, Kent. Third, 10s., Mr. T. Turton, gardener to Jno. Hargreaves, Esq., Maiden Erleigh, Reading. Fourth, Mr. G. Trinder, The Gardens, Dogmersfield Park, Winchfield, Hants. Extra, Mr. T. Dunn, gardener to Sir F. W. Truscott, Oakleigh, East Grinstead, Sussex.

Class 16.—Six dishes of five dessert Pears, one variety in each dish.—First, 30s., Mr. Wm. Allan, Gunton Park, Norwich. Second, 20s., Mr. R. Smith, gardener to A. Cox, Esq., Presdales, Ware, Herts. Third, 10s., Mr. C. Blick, gardener to Martin R. Smith, Esq., Hayes Common, Hayes, Kent. Fourth, Lady F. Fletcher, Kenward, Yalding.

Class 17.—Six dishes of five cooking Pears, one variety in each dish.—First, 30s., Mr. G. Woodward, gardener to R. Leigh, Esq., J.P., Barham Court, Maidstone. Second, 20s., Mr. W. Dance, gardener to Mrs. Lowe, Gosfield Hall, Halstead, Essex. Third, 10s., Mr. G. W. Cummins, gardener to A. H. Smee, Esq., The Grange, Carshalton, Surrey.

Class 18.—Six dishes of other hardy fruit (as in Section II.), one variety in each dish.—First, 30s., Mr. J. Sheppard, Woolverstone Gardens, Ipswich. Second, 20s., Mr. G. Woodward, gardener to R. Leigh, Esq., J.P., Barham Court, Maidstone. Third, 10s., Mr. G. Trinder, The Gardens, Dogmersfield Park, Winchfield, Hants.

SECTION IV.—NURSERYMEN AND TRADE GROWERS IN THE UNITED KINGDOM.

Class 19.—Collection of hardy fruit of all kinds, at the discretion of the exhibitors, each collection to cover not more than 15 feet run on tables of 3 feet width.—For these collections money prizes were not offered, but the Judges awarded for those which are meritorious the framed certificate of the Worshipful Company of Fruiterers. Northern Zone, certificate: No award. South-Western Zone, certificate to Mr. Henry Berwick, nurseryman, Sidmouth Nurseries, Sidmouth, and John Watkins, Pomona Farm Nurseries, Withington, Herefordshire. South-Eastern Zone, certificates: Messrs. G. Bunyard & Co., nurserymen, Maidstone; J. Cheal & Sons, Crawley; J. Peed & Sons, Streatham;

T. Rivers & Son, Sawbridgeworth; A. J. Thomas, Sittingbourne; Jas. Veitch & Sons, Chelsea; J. Laing & Sons, Forest Hill; J. Clarke, Albion Nursery, Farnham. Awards of merit: Balchin & Sons, Hassocks Nursery, Sussex; Paul and Son, Cheshunt; Wm. Paul & Son, Waltham Cross; A. Wyatt, Hatton, Middlesex; W. Taylor, Hampton.

SOCIETIES AND MISCELLANEOUS.

Framed certificates were also awarded to the British Fruit Growers' Association for 300 dishes Apples and Pears; to the Royal Horticultural Society, Chiswick, for fifty dishes Apples, Pears, and other fruits; also to Mr. Reynolds, Gunnersbury Park Gardens, W., for a collection of fine Melons.

SECTION V.—AMATEURS AND GARDENERS IN THE UNITED KINGDOM.

The silver medal of the Fruiterers' Company and money prizes.

Class 20.—Six bunches of black Grapes, distinct varieties.—First, silver medal and 60s., Mr. Wm. Allan, gardener to Lord Suffield, Gunton Park, Ipswich. Second, 60s., Mr. George Reynolds, gardener to the Messrs. De Rothschild, Gunnersbury Park, Acton. Third, 40s., Mr. W. Iggulden, gardener to the Earl of Cork, Marston, Frome. Extra prize, Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Derbyshire.

Class 21.—Six bunches of White Grapes, three Muscats, and three other White varieties.—First, silver medal and 60s., Mr. John Crawford, gardener to Col. Thorp, Coddington Hall, Newark-on-Trent; second, 60s., Mr. W. Iggulden, gardener to the Earl of Cork, Marston, Frome; third, 40s., not awarded; extra prize, Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Derbyshire.

Class 22.—Six dishes of five Tomatoes, one variety in each dish. First, 30s., withheld; second, 20s., H. H. Hurnard, Esq., Gurney's Manor, Hingham, Attleborough, Norfolk; third, 10s., R. Hill, gardener to H. B. Bower, Esq., The Brae, Minchinhampton, Gloucester. Extra prize, Mr. C. J. Waite, gardener to Col. the Hon. W. P. Talbot, Glenhurst, Esher, Surrey.

SECTION VI.—AMATEURS AND GARDENERS IN THE UNITED KINGDOM.

Class 23.—Collection of fifty dishes of fruit, to consist of thirty varieties of Apples and twenty varieties of Pears, five specimens in each dish.—First, gold medal, Mr. George Woodward, gardener to R. Leigh, Esq., J.P., Barham Court, Maidstone. Second, silver-gilt medal, C. Davies, The Mote Garden, Maidstone. Third, silver medal, Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Derby. Extra, Samuel Barlow, Esq., J.P., Stakehill House, Castleton, Manchester.

SECTION VII.—AMATEURS AND GARDENERS WITHIN A RADIUS OF SEVEN MILES FROM THE ROYAL EXCHANGE.

Class 24.—Twelve dishes or less of hardy fruit at the discretion of the exhibitors, one variety in each dish.—First, 40s., William Roupell, Esq., Harvey Lodge, Roupell Park, Streatham Hill, S.W. Second, 30s., Lady Whitehead, Highfield House, Catford Bridge, Kent. Third, 20s., Mr. F. Minchiner, Park House, Avenue Road, Penge, Surrey.

SECTION VIII.—JAMS AND PRESERVES, TRADERS AND MANUFACTURERS.

Class 25.—Collections of Jams, Jellies, and Preserves of various kinds at the discretion of the exhibitors, made of British-grown fruit only, each collection to cover not more than 6 feet run on tables of 3 feet width.—Certificate, Messrs. Barnes & Co., Fishmongers' Hall Offices, for Bottled Fruit; The Britannia Fruit Preserving Company, Kelvedon, Essex, for Bottled Fruit; Messrs. Chivers & Son, Histon, Cambridge, for Bottled Fruit and Jam; Messrs. Beach & Sons, Ealing Road, Brentford, for Jam; Harrod Stores (Ld.), Brompton Road, London, for Jam; Goodhew & Son, Borden, Sittingbourne, for Jam.

SECTION IX.—JAMS AND PRESERVES, COTTAGERS AND AMATEURS.

Class 26.—Four jars of Jam, distinct sorts.—First, 40s., Mrs. Smee, The Grange, Carshalton, Surrey. Second, 30s., Mrs. Emma Wood, 70, Gloucester Street, Warwick Square. Third, 20s., Mrs. Goodacre, Elvaston Castle Gardens. Fourth, 10s., Mrs. S. H. Goodwin, Mereworth, Kent.

Class 27.—Four bottles of old Fruit, distinct sorts.—First, 40s., Mrs. Smee, The Grange, Carshalton, Surrey. Second, 30s., Mr. John Taylor, Hoole Hall, Cheshire. Third, 20s., Mrs. Goodacre, Elvaston Castle Gardens, Derby. Fourth, 10s., withheld.

Class 28.—Four bottles of whole fruit preserved in syrup, distinct sorts.—First, 40s., Mrs. A. J. Budden, 65, Freshfield Road, Brighton. Second, 30s., Mrs. Goodacre, Elvaston Castle Gardens, Derby. Third, 20s., Mrs. G. T. Barnes, Stoodley, Tiverton, Devon. Fourth, 10s.—Not awarded.

Class 29.—Four bottles of Fruit Jellies, distinct sorts.—First, 40s., Mrs. Smee, The Grange, Carshalton, Surrey. Second, 30s., Mrs. Sheppard, Woolverstone, Ipswich. Third, 20s., Mrs. Nicholson, Sewardstone, Chingford, Essex. Fourth, 10s., Mrs. J. Macdonald, Clyde Villa, West Hill Road, Wandsworth.

JUDGES APPOINTED FOR GUILDHALL SHOW OF THE WORSHIPFUL COMPANY OF FRUITERERS.

Section I. and II., Classes 1 to 11.—Dr. Fotherby, A. H. Smee, Esq., Mr. John Wright, and Mr. Geo. Paul.

Section III., Classes 12 to 18.—H. R. Williams, Esq., Shirley Hibberd, Esq., Mr. Joseph Cheal, and Mr. Lewis Castle, Hon. Sec. B.F.G.A.

Section IV., Class 19.—Sir James Whitehead, Master; Mr. S. T. Wright, Dr. Robert Hogg, LL.D., and Mr. G. Woodward.

Section V., Class 20.—G. J. Brocklesby, Esq., Upper Warden; Mr. Brooks. Class 21.—Mr. A. F. Barron, R.H.S.; Mr. Coomber. Class 22.—Mr. Geo. Wythes.

Sections VI. and VII., Class 23.—R. S. Mason, Esq., Rev. W. Wilks,

STOKEHOLES AND BOILERS.

NOTHING connected with horticulture under glass is of so much importance as the heating appliances; hence the reason that all such should be found in perfect order ere the frosty nights are upon us, for then the work can only be very incompletely performed by reason of the hurry and bustle to have things in working order at the moment they are required. Moreover, when it is done at the last moment



FIG. 37.—SIR JAMES WHITEHEAD, BART.

F.R.H.S., Samuel Barlow, Esq. Class 24, Mr. T. Francis Rivers and Mr. George Bunyard.

Section VIII., Class 25.—Henry Martin, Esq., Renter Warden; Messrs. Fortnum & Mason, John Barker, Esq., Mr. W. Warren.

Section IX., Class 27.—Baroness Burdett-Coutts and Lady Whitehead. Class 28 and 29.—Mr. T. W. Beach.

Experts for awarding certificates of award.—Chairman, Dr. Robert Hogg; Messrs. T. Francis Rivers and Joseph Cheal. Secretary, Mr. George Bunyard. Superintendent of the Exhibition, Mr. Richard Dean.

in many instances has to be repeated or patched up before long; while another reason for having such work done when fires are not needed is because hot-water engineers are invariably taxed to their utmost later in the season. In those instances where fresh stokeholes have to be made this constitutes an important item, particularly in those districts having a deep subsoil of gravel overlying a stratum of clay, for not unfrequently the construction of the stokehole in such places is a serious item, not to say troublesome, and a continuous worry if they are not properly made in the first instance, and if the first chance is lost it is an expensive matter to deal with afterwards when the boiler has been

fixed in position. In this respect lucky are those that are not troubled with wet stokeholes, and those that are not have drawbacks in other ways to contend with. Damp or wet stokeholes are directly opposed to economical heating, and equally opposed are they to getting up a sharp brisk heat, for where the stokehole is damp the boiler and flues will be proportionately so, as no fire can burn freely or economically that first has to dispose of superfluous moisture such as this. I have in mind several localities where the making of a good stokehole is a rather expensive item, on account of the gravelly subsoil and the land water in winter time coming so near the surface, and I have known as much as a hundred pounds spent on a stokehole with a view to keep the water out, but which has ended in a complete failure, owing to some little whim having been very carefully carried out; but the pressure of land water is rather great in some districts in winter time, and will admit no whims or fancies being adopted, and nothing short of solid, honest work can stand against it.

Some six years ago in this neighbourhood (West Middlesex) a stokehole was constructed at nearly the cost just named, and by the adoption of a little fad has never kept the water out, with the result that it has proved necessary to put down three new boilers this season, one of the old ones (if a six-year-old may be termed such) having given way. Apart, too, from so sudden and serious an expense is the fact that the stokehole has been a great trouble in winter time to keep the water out, and in case of heavy rains could only be left four hours day or night without pumping, in order to keep the fires from being put out. Such a state of things all wise and prudent gardeners will endeavour to avoid, though at times even experienced men are deceived. A change of situation may and frequently does involve a variety of new experiences, and in this way I have known nurserymen driven by degrees from London to the suburbs to do battle with foes which to them did not exist because unseen. Many have taken out the hole for their boilers, and finding the base dry have never provided for the contrary. But let me advise all who sink stokeholes in gravelly districts never to trust to anything but a thoroughly watertight foundation, for no soils are more treacherous, and when the water comes in you have no further control in the matter.

The whole of the stokeholes which are sunk in this neighbourhood have to be made in strong cement concrete—i.e., if they are to remain perfectly dry, and it is no unusual thing for 3 tons of best Portland cement to be used in one of them. The usual way they are constructed is this: In excavating, the soil is removed about 1 foot deeper than that required for the boiler and connections, and the bottom being perfectly dry a concrete is formed of four parts clean rough stones to one of cement, and being well mixed is placed at the bottom of the hole to the depth of 1 foot or thereabouts, leaving the surface level. This is allowed to settle for a couple of days, by which time it is quite hard, when it is surfaced over with clean sharp sand (river grit is the best that can be used) and cement, the proportion being much the same as that used for the concrete. Of this from 1 to 2 inches thick is floated over the surface, and again allowed time for setting. Such is the material, then, that invariably constitutes the stokehole bottom in this district, and while giving every satisfaction in keeping the water back, affords an excellent foundation for the boiler itself to rest upon. In constructing the side and end walls, cement and mortar are generally used together, the strength about six to one. With such a foundation below no footing course is employed, but as a precautionary measure against water forcing its way in at a weak point the first course of bricks is generally bedded on with neat cement; the bricks all being soaked in water as the work proceeds prevents a too rapid absorption ensuing. The walls are then carried up with rough joints, inserting on the reverse side a 9-inch pier here and there for strength. After the walls are completed they must be faced with sharp sand and cement to a thickness of three-quarters of an inch, composed of about four and one—some prefer to employ it at six and one—and finally skim over with neat cement. The former, however, makes an excellent job.

It is in such stokeholes as these that boilers are enabled to do their work and give satisfaction; not so, however, when handicapped as they undoubtedly are in damp or wet stokeholes; for in these they rust away at more than double the rate of fair wear and tear, particularly is this the case where the water is also allowed to remain in the boiler when not in use. Many hundreds of people have no alternative but to allow the water to remain in the boiler, simply because to empty the boiler would mean also to empty the pipes, a serious item where the water for refilling has to be carried in. Much of this may be avoided by inserting an extra pair of screw-down valves in the main near the boilers, for then the boilers alone could be emptied without interfering with the general run of piping; it adds but a trifle to the original cost, while the advantages accruing from such an arrangement are considerable.—J. H. E.

FALLING LEAVES.

THE falling leaf has been from time immemorial a theme of the poet and sentimentalist. Nor can any, save the colour blind, be coldly callous to the warm tints of beauty which diffuse themselves in autumn through the vegetable world. Nature's blush, as she puts off her robe of living green to doff her winter garb of poverty, merits our most respectful regard. Yet the notion that autumn is a time of general decay adds but another to the myriad popular fallacies which it is the function of science to dispel. The fall of the leaf, in fact, despite all

the tender moods of poetry and the sighs of the love-lorn, is a token and a result—not of death, but of life. The vital processes involved in the forming of the reddish-brown heaps that rustle and crackle around our feet in an October walk are as definite and wonderful as they are oft entirely overlooked.

To appreciate these we must learn, as science would ever teach us, to look beneath the surface of mere seeming into the heart of Nature's realities. Nor does the beauty of the distant landscape suffer any loss at all from our knowledge of the biological history of leaves and flowers close at hand, or of the grass beneath our feet. The case before us is one especially concerned with that constant struggle for existence, which our eyes are now opened to see going on wherever life is known. The acknowledged uncertainty of our climate detracts nothing from the general certainty of a definite and abiding difference in temperature between summer and winter. We who live in these "temperate" zones must accustom ourselves to variations and extremes of season changes which are wholly unknown in tropical regions; and the vegetable world, no less than the animal, has to learn to face these realities—in fact, plants are said to be even more sensitive to variations in temperature than animals.

Thus, from the rustle of the drying leaves, even before they fall, we hear once more the old story of that adaptation to environment which characterises all life. Trees, as well as men, must find how to endure through winter if they would luxuriate in summer. Spring's apparently new created vigour, and the seeming decay of autumn are, after all, only the natural steps whereby the transition from one adapted condition to another is gently broken. Plants are, moreover, in a somewhat worse case than animals, seeing that they have no power to transport themselves from one region to another. The genus, or even the species, may gradually migrate to pastures fresh through the kindly free portage of seed by wind or insects; but the individual plant or tree must live or die where it stands rooted in the soil. Without a root there is for it no life, but with the root no travelling.

In these days we know happily how easy animal locomotion permits the debilitated city merchant and the weary brain worker to seek bracing air by the seaside. The consumptive patient can prolong life by removing his bodily apparatus to Grand Canary or Madeira. Not so the plant. It must remain *in situ*. The tonic or preservative of change of climate cannot enter into its pharmacopæia. Whatever comes or goes it must face all in patience. It must adapt itself to environment or cease to be. This brief biological preamble is really necessary to our present study, for it conveys the essential principle of that whole phenomenon before us which most people so easily ascribe to death and gravitation. As a matter of fact the latter has next to nothing, and the former quite nothing to do with it. The falling is a mere trifle in the matter, and the process is entirely a vital one, the decay of the separated leaf being but a following accident, which may here be left out of account. Before the separation it is so genuine a case of *euthanasia* as to refuse to be worthily called death. There are, at least, three distinct vital processes concerned in falling leaves, and these are based upon a definite principle which is nowhere in nature more wonderfully and instructively exhibited.

The principle is one of economy. The processes are those which effect (1) the avoidance of loss of valuable material; (2) the actual removal of an organ no longer profitable to the tree; (3) the protection of the tree from injury at the points of removal.

We will glance briefly at these, concerning ourselves now only, of course, with trees that we know are "deciduous." Everyone understands to-day how entirely the vegetable world is dependent upon chlorophyll. Thanks to the modern diffusion of scientific knowledge there are but few who have no idea of this fact. Not everyone, however, apprehends in this connection the supreme importance of leaves to the trees that bear them. That they are the true functional representatives of both lungs and stomach, is a fact only dimly grasped by very many of those who are "fond of flowers." Nor would they probably be disposed at first to admit that the leaf is a more highly organised structure than the flower, and of much more value to the parent organism. Yet so it is, though here we must assume rather than stay to prove. Now we are almost all aware that a certain temperature must be maintained in the animal stomach if digestion is to take place happily. The exception is apparently found in the case of those who flood themselves inside with cold water by way of commencing dinner. A better prescription for the sure acquisition of dyspepsia could hardly be invented. And the harm is not, as is sometimes thought, in the "dilution of the gastric juice," but in the reduction of the temperature. Thus Dr. Beaumont observed that the introduction of a single gill of water at 50° Fahr. into the stomach lowered its temperature upwards of 30°, and its natural heat was not restored for more than half an hour. And when a bottle containing food and gastric juice—easily digested at 100° Fahr.—was exposed to cold air, scarcely any digestion at all took place. So much for the practice—as sensible as any other item of fashion—of taking ice and iced cold water with a meal.

To return to chlorophyll. It is found that its important functions can only be discharged at a temperature varying between 6°–40° C., or 40°–90° Fahr. This manifestly requires direct sunlight, and an absence of cold winds, frost, &c. Now whatever doubts we may have concerning to-morrow's weather, we know well that between any autumn and the following spring we shall have more or less of the latter, with a great deal less of the former. Hence, very little, if any, assimilation could be carried on in the leaves by the chlorophyll, even if they hung on all the winter through. The tree, therefore, is very

much in the position of some of our modern houses of business, which during the season put forth branches at the various watering places, and do a thriving trade; but when winter drives custom away they find it pay best to withdraw their "staff" and stock, and close until the next season. It is no less plain that if all leaves remained *in situ* through the winter the balance of profit would turn against the parent tree instead of for it. Those which, during summer's sunshine, are the great source whence the tree draws its supplies and grows thereby would have themselves to be supplied whilst winter's cold prevailed. The cost of such nourishment and repair through the cold dark months would have to be subtracted from the proceeds of summer work. The tree would be by this so much the loser that plain principles of economy, working in nature according to the law of each organism's being, not by caprice as in human nature, demand their removal.

(2) But even this called-for removal is done economically. As the business firm which closes its season shops takes good care first to remove all valuables, so before the leaves are dropped off their respective branches, they are previously drained of their precious contents by processes which collect, transform, and transport them into persistent reserves in the parent organism. Thus, when winter once more melts into spring, and the vital mysteries of spring energy begin to express themselves in renewed growth, there are materials at hand to work upon, so that forces from within and from below may combine to produce the new buds whence are to come the twigs, branches, and leaves for another season's ingathering.

To describe in detail the draining processes referred to would require no little space. It must suffice here to note that it varies in different trees. In the Vine the form of the chlorophyll corpuscles is first destroyed, then the colour goes. In the Elder and Poplar the form and colour of these minute bodies melt away together after the earlier disappearance of the starch. In the Horse Chestnut all seem to go about the same time. The main point to be observed is that there is a definite emptying by means of colligative changes in the chlorophyll bodies. And it is to these changes, with their results, that the well known hues and tints of autumn are due. Thus (i.) in place of the real green and definite form of the chlorophyll corpuscle there are found in autumn leaves before they fall numbers of yellow oil drops, with still larger quantities of very small yellow granules. Their colour and substance are quite distinct from the etiolin which precedes the appearance of chlorophyll. They are, moreover, often embedded in red sap, whence arises the beautiful colouring which some leaves exhibit. (ii.) The means by which this economic work is done will be easily apprehended by all who bear in mind what is known as the fibro-vascular system. This is far too complicated to admit of detailed description here. Any good book upon botany, moreover—*e.g.*, Prantl and Vines—will supply the requisite information. Perhaps the best possible illustration of this system is found in those specimens of the "veins" of leaves, which are often obtained by maceration of the softer parts. These so-called veins when examined microscopically exhibit a series of tubes and vessels, the function of which is exceedingly difficult to define in detail, but which amply suffice to afford channels whereby food materials may be transported. It is not needful, therefore, to step aside here and decide the mixed puzzles of histology and biology. That (iii.) the emptying process referred to does take place can be shown to conviction in several ways. First, by micro-chemical testing, which shows that in the just fallen leaf there is scarcely a trace of starch, whereas the vigorous leaf abounds with it. Or, again, it may be demonstrated by testing carefully the chemical constituents of the ash of a leaf in full vigour, as compared with that of one naturally fallen. The presence in the former and absence in the latter of potash and phosphates is manifest and sufficient.

(3). The drained leaf-skeletons being then obviously of no service to the parent organism during the following six months, it is highly desirable that such should be removed. And in considering how this comes to pass, we are brought face to face with another of those marvels of anticipation in Nature which so deservingly astound us, and land us ultimately in life mysteries which laugh at all our theories of biology. What, for instance, do we know of the processes whereby, in the dark and under water, the eyes of Libellula are fashioned, with their 24,000 facets? We can only say, with Topsy, that we suppose they grow. And it is a no less remarkable work of Nature which underlies by anticipation the autumnal leaf-fall.

Long before the leaf shows any signs of dissolution there are internal indications of a coming change. These consist in the development of two new cortical features at the base of the petiole—*viz.*, periderm and the absciss layer. The latter is a layer of special cells—smaller, more rounded, and more loosely coherent than the ordinary cortical parenchyma—which is formed immediately beneath the base of the leafstalk. This is not always equally easy to make out distinctly, yet it may be plainly observed in the following:—*Aesculus Hippocastanum* (Horse Chestnut), *Robinia pseudacacia* (Bastard Acacia), *Populus dilatata*. If access to *Gymnocladus canadensis* (Kentucky Coffee-tree) be possible it is a specially suitable subject for illustration, and may be experimented on. Thus if strong leaves are placed in the dark or damp an absciss layer is formed at once under the base of the leaflet-stalks, so that in about two days the leaflets drop off on the slightest touch. Almost equally good subjects for investigation are *Ailantus glandulosa*, *Fraxinus excelsior*, and *Juglans regia*. For ordinary students the Horse Chestnut is best, both because of its easy accessibility and plainness of demonstration. When the absciss layer is fully developed the leaf drops

off with a very small amount of mechanical disturbance, thus especially through the force of the wind.

Sachs also interestingly states how temperature effects a similar result. The cells of the absciss layer being loose and rounded allow of the presence of more water than usual in their interstices. Thus with the first frosty nights of October a thin plate of ice is formed as a plane of separation from the parent branch, underneath the base of petiole. The well-known expansive power of ice acts here as elsewhere, consequently the leaf and its stalk are gently all but severed from the tree, and when the sun arises there is in its rays sufficient heat to melt the ice film, whence, in the morning, leaves drop off in great numbers.

(4) But the anticipative power of Nature is still more manifest when we consider the means adopted for prevention of injury at the points left bare by the removed petiole. Ordinarily, of course, the fibro-vascular threads which ramify through the leaf blade are collected together into a string or bundle, passing down the leafstalk and joining others in the parent branch or tree; but whilst the absciss layer immediately precedes the fall of the leafstalk there is much earlier a remarkable formation (on the inner side of where it afterwards appears) of what is known as periderm.

To make this intelligible to non-technical readers it must be pointed out as tersely as possible that plants require a "skin" as much as animals. They can no more afford to have bleeding spots without a protecting cuticle than we; hence they are provided with an epidermis, which in all trees and large plants involves more or less of cork. Generally the epidermis serves three functions—(1) prevention of excessive evaporation; (2) protection from injury; (3) strengthening. Here we are concerned with 1 and 2. It must be remembered that what is properly termed cork really involves several distinct layers of cells, histologically considered. The most important is a layer of actively dividing cells, known as phellogen or cork cambium, from which are formed externally cork proper or phellem, and internally phelloderm. The whole of these is included in the name periderm.

Now, it is of great importance that a corky shield should protectingly cover up for the winter the spots which are left naked by leaf-fall; but this can only be done from within. Nothing can grow out from the external cork to form a covering. As a matter of fact the periderm is formed long before leaf-fall, even whilst the fibro-vascular bundles are in full discharge of their functions, hence they pass right through this growing plane of periderm, and their broken off ends at first project when the petiole is actually removed, and it is to these the peculiar marks are due, which are seen in every "leaf scar."

When the leafstalk drops off, carrying the absciss layer with it, there is left behind at first apparently some greenish parenchyma cells on the outside; but the foregoing section shows that under this veil of parenchyma there is already prepared a layer of periderm, with its plane extending beneath the whole, except through the fibro-vascular bundles; but now it begins to develop through these also—that is, right across the roundish area left bare, consequently the outer cells just mentioned dry up, and ultimately a completely closed layer of cork is formed over the recently exposed tender spot; this increases somewhat in thickness until the branch is effectually protected against the coming storm and cold of winter, thus the tree remains adapted to its environment until once more spring draws on, and the daily increasing amounts of heat and light indicate that it is safe and profitable to put forth again buds and leaves. Then recommences that fixation of carbon with evolution of oxygen, whereby the tree itself is nourished and the healthful balance between the vegetable and animal world is so wondrously maintained. It seems to me impossible to attribute the marvellous inter-working of all these processes, reasonably to mere fortuity.—REV. F. BALLARD, M.A., B.Sc. (in *The Journal of Microscopy for October, 1890.*)



CHRYSANTHEMUMS IN THE SOUTH.

THE time is now fast approaching when growers will become anxious as to their chance of success at the forthcoming exhibitions; they will be comparing their plants with those of their neighbours to ascertain if they are likely to be too early or too late, too weak or too strong, and so forth. Each grower has fancies of his own in these respects; and as everyone has not the opportunity of inspecting for themselves the collections of plants belonging to exhibitors in the past, and would still like to know how their probable opponents are "looking"—a familiar term amongst growers of Chrysanthemums—I will note what I saw in a hurried run through some gardens a short time since.

Messrs. W. & G. Drover's nursery at Farcham, during the last few years especially, have devoted much attention to Chrysanthemums for large blooms, and with excellent results. Many new varieties have been tested to discover their worth for exhibition. The greater part of the space in the nursery is covered with glass houses devoted to the flower trade. The plants are arranged in blocks, the lines running north and south parallel with the glass structures, and one very long row of Japanese is arranged in front of a lean-to range of houses on the edge of the path.

The number of the plants grown this year for large blooms cannot be less than 700. Many others are cultivated to supply cut blooms in quantity later on. The plants look remarkably well, just the wood, foliage, and buds to produce blooms; and Mr. Adams, the grower, may well feel proud of his charge. The plants are tall and exceptionally strong, but the growth is well matured; the leaves have a bronzy hue from the base upwards, which betokens gradual ripening. The buds are what most experienced growers would call "about right," being "taken" at various times to prolong the display as late as possible. Very promising were Stanstead White, Sunflower, Madame Bacco, Boule d'Or, Etoile de Lyon, Mr. H. Cannell, Mrs. C. Wheeler, Baronne de Prailley, and its sport Carew Underwood, Belle Paule, and M. Bernard. I have never seen such stems as the first named had, over 1 inch in diameter, and quite brown. New Japanese were represented by Marvel, one of Délaux's varieties; J. Bourne, a reflexed Japanese, rich yellow, from Messrs. Elliot, Jersey; M. E. A. Carrière, Veil d'Or, Mrs. J. Clark, W. W. Coles, and Mrs. Alpheus Hardy. Much has been written against this novelty as to its manner of growth, but judging from plants of it here it is partly the fault of the cultivator. No doubt the rapid propagation to which it was subjected last season has much to do with its general weakness this season.

The incurved varieties are grown in masses of one sort rather than a number, merely for the sake of variety. Whole rows of the "Queen" family ranged from 7 to 8 feet high, of splendid proportions—Princess of Wales, Lady Carey, Prince Alfred, Novelty, and a capital stock of its sport Alfred Lyne, which is thought highly of here. The "Tecks" were full of promise, all the buds being "taken." One point in the appearance of the plants generally to which I attach much importance is the manner in which the flower stems were swelling; they were fairly "bulging" out a couple of inches or so below the buds. The size of the pots in general use was smaller than is usually employed, many being rather less than 9 inches in diameter; many plants also were growing two in one pot—of large size of course. By the appearance of the plants large pots are not a necessity. No doubt many of them derived assistance from the manner in which they are top-dressed. A collar 2 inches deep made of zinc is fitted inside the rim of the pot, and gives much more space, not only for additional feeding material in top-dressing, but provides space for a greater water supply.

ROOKSBURY PARK.

Until last year Chrysanthemums were grown here in but small numbers, but upon the change in the management it was not to be expected that Mr. N. Molyneux could rest content with a score or two of Chrysanthemums after the numbers grown at Swanmore Park, where he received his early training in this phase of horticulture. He has increased the number of plants here until he has now under his care the usual 500. Those persons who saw the plants in the early part of July would scarcely believe they were the same that are now to be seen, so wonderful is the change in their appearance since that date. Owing to the pressure of other duties at that time, the Chrysanthemums did not progress quite so well as could have been expected, but by close attention they now look as well as it is possible. Their wood is perfectly ripened, and cannot fail to produce blooms of high quality. The plants are arranged on each side of the kitchen garden paths, some running north and south and others east and west, which allows of some of the plants having the sun upon them the whole day. Some of the varieties, notably Madame C. Audiguier, Belle Paule, Carew Underwood, and Baronne de Prailley, have "run up" exceptionally tall; but they are stout also, and betoken fine flowers, judging from the manner in which the buds are swelling. Such early Japanese as Frederick Marrouch, Avalanche, Edwin Molyneux, Mdle. Lacroix, George Daniels, and J. Délaux, by the manner in which they are opening their flowers give an indication of what is to follow in the later and better timed buds. The "Queens," of which there is one long row, promise right well, and so do the "Tecks." An opportunity here will be obtained of proving whether the new varieties, John Doughty and Mrs. S. Coleman, are an advance upon their parents or otherwise. The plants of these promise well. As Mr. Molyneux has a capital place to show off the flowers to the best advantage when they are fully developed—a large conservatory near the mansion—he will, no doubt, have a fine show of blooms, about which more may be heard later on.

HINTON HOUSE, PORTSMOUTH.

This is the residence of T. Edgecombe, Esq., whose gardener, Mr. Adams, has recently made himself renowned for the Chrysanthemums cultivated there under somewhat adverse circumstances. It is indeed a real town garden, being surrounded by numerous tall trees, that the quality of the plants to be found in this garden came upon me as a surprise, and not only shows what an accommodating plant is the Chrysanthemum, but proves what can be done under difficulties by a painstaking gardener. Mr. Adams grows about 300 plants upon the tall system, presumably for large blooms. Good "bushes," which are much prized here for conservatory decoration; and capital plants in 6-inch pots, mainly of single varieties, which are very effective when employed, as they are here, to hide the pots of the taller plants when in bloom in groups in the conservatory. Those plants intended for large blooms are strong yet not gross, have fully developed leaves and nicely ripened wood, the buds are swelling kindly, and promise to develop handsome flowers. Some finely half-developed blooms of Lady Lawrence I noted in one of the vineries, showing what a substance of petal this variety possesses when seen in good condition.

VICTORIA PARK, PORTSMOUTH.

Mr. Hatch, the Superintendent, labours well here to obtain success in the growth of the Chrysanthemum, which this park has of late obtained a name in the neighbourhood of this busy town. About 200 plants are grown on the tall system, half that number on the cut-down plan, which is found very serviceable here in the low-built houses in the park; about fifty bushes, and as many singles. At the Portsmouth Show Mr. Hatch invariably stages the best blooms of this section, the equals to which I have not seen anywhere, and by the appearance of the plants similar results may be again expected. Taken altogether the plants give promise of future development quite up to the previous standard, and perhaps superior to many found in places with much more convenience.

SWANMORE PARK.

In connection with southern Chrysanthemums a note on their appearance here will not be out of place in a passing notice on this subject. Although Mr. Molyneux has not taken an active part in competing during the last two years, nevertheless the number of plants grown have not diminished, more attention being given now to the growth of new varieties. No less than seventy are on trial this season from all sources. One variety, Bouquet de Dame, already gives promise of future excellence, it is very much after the style of Avalanche in formation, having flat florets, a full flower, a dull white in the earliest blooms, later ones promise a pink tint on the outer side of the florets.

Several new French and American varieties are under trial; one point which they possess and is very marked is their dwarf character, which is a decided step in the right direction. Experiments are being tried with a view of dwarfing the growth of some sorts, and proving whether it is possible to do this without depreciation of quality in the flowers. If success should follow in this respect a decided gain will be the result. The tall growth of many does far more to bring adverse criticism upon the method of culture now so largely practised than anything else. Many of the Queen family are now but 4 feet high, with their buds "taken;" although they are so dwarf the plants have not been subjected to the cutting down plan to attain the object in view. Etoile de Lyon, which was shown so well from here last year, is rather largely grown this season to further test its capabilities.—VISITOR.

THE FORMATION OF CHRYSANTHEMUM SOCIETIES.

Now that the number of Chrysanthemum societies is so much on the increase in all parts of the country, it seems a fitting time to discuss their formation and constitution. Frequently floral societies fail through supineness on the part of their promoters, who seem to have an idea that so long as they have a schedule of prizes printed they may then rest on their oars, and, like Mr. Micawber, wait for something to turn up; but, as a matter of fact, issuing the schedule is merely the commencement of the work, after which every move has to be thought out as carefully and thoroughly as if it were one's private business on which wives and families are depending.

Let us suppose that we are in a town of some size. First obtain a good representative working committee, who will not only attend meetings and give advice, but who have the success of the movement at heart, and will use every exertion to attain that end. Then comes that all-important person, the secretary, upon whom depends to a considerable extent the welfare of the society. Secure if possible an enthusiast who is independent of party clique—one who will work for the sheer love of the thing, and give such services as cannot be obtained by payment.

It is very essential to form a good backbone consisting of annual subscribers. This is one of the most onerous, but at the same time most important tasks in the organisation and maintenance of a Chrysanthemum society; frequently it is left to two or three, instead of being, as it should be, the business of every member of the committee. What is laborious for a few is comparatively light and easy for the many, besides which the interest in the society is spread over a wider and more varied area, this doubly ensuring its stability. With an ample list of annual subscribers the committee feel, to a certain extent, independent of the weather on the show days, and other vicissitudes, and are enabled to launch out more boldly than they would otherwise feel justified in doing; they therefore secure a better show, and thus please their subscribers and the public. In Chrysanthemum shows, as in most other things, it is very true that success begets success.

In the formation of the schedule, cater for all sections of growers, so far as funds will allow, and if either the society or some generous individuals offer some cups in addition to the money prizes—such cups to go to the employer—it will be an inducement to the latter to allow their gardeners to compete.

There is a growing tendency among Chrysanthemum societies to attach too much importance to cut blooms, and neglect other sections of the show; but though a fine display of cut blooms may gain notoriety for a show in the horticultural world, it does not do so to such an extent among the money-paying public, and public taste must be considered, or failure will inevitably ensue.

Firstly, in the cut bloom section offer a few large prizes to attract first-rate growers, whose exhibits will form object lessons for those less expert, inciting the latter to improvement, and thus to become eventually themselves among the mainstays of the show. Do not at first make the conditions too stringent. Remember that to stage, say, forty-eight blooms, half incurved and half Japanese,

all distinct, is not a light task. Rather let it be "not less than eighteen varieties of each," at any rate for a commencement, and in course of time the regulations may be made more strict. Encourage local talent by limiting a few classes to exhibitors residing within a certain radius. Then the amateurs employing no gardener should not be forgotten; at first their productions may not be of the first order, but amateurs are generally enthusiasts, animated with a desire to excel, and before long will doubtless take a more prominent position.

Not much need be said as regards plants, but by all means have a class for groups, as to the general public they are amongst the greatest attractions of a show. If interspersed with foliage plants the beauty of the groups is greatly enhanced, and it allows of the edge being brought down to the ground instead of being, as is frequently the case, a wall of unsightly sticks and stems. The shape of the groups must depend upon circumstances, but it will be found that ovals or half-ovals have a more graceful effect than circles or half-circles. If a rule is made that the groups shall be finished the day before the show, it will be of advantage to the exhibitors themselves, as well as to the officials.

Lastly, but by no means least, I come to classes competed for by ladies only, which I do not recollect having seen in any Chrysanthemum Society's schedule except that at Hull. Though these classes absorb a good deal of money, they are well worthy of it; firstly, by reason of the usually beautiful character of the exhibits, also on account of the interest they excite among the families and friends of the competitors as well as the general body of visitors. The classes which may be provided for in this section are dessert or dinner tables (the former are the prettier), bouquets, dress-sprays, baskets, and other arrangements executed with Chrysanthemum flowers and any kind of foliage. The size of the dessert or dinner tables should be not less than 8 feet by 4 feet, though, if space will allow of it, 16 feet by 4½ feet will afford greater scope. The tables should be ready for the use of the ladies on the day before the show, and if they can be shown by gaslight the effect will be more pleasing.

For judging, procure the services of the most experienced men available—men who are not only first-rate judges of this particular flower, but are also experienced in the actual work of judging; men whose names and standing will inspire confidence in the accuracy of their decisions and carry the Society safely through in the event of a serious dispute. Remember a man may be an excellent judge of a flower, but a very bad adjudicator if he is inexperienced in the work.

The committee must not fail to bear in mind, that to the general public there is a certain amount of sameness between one Chrysanthemum show and another; they will, therefore, do wisely to provide other attractions, in the shape of music, &c., which may be varied from year to year.—R. FALCONER JAMESON, *Hessle, Hull* (in "*Castle's Chrysanthemum Annual*.")



FRUIT FORCING.

VINES.—*Early-forced Vines in Pots.*—These always mark the advantage of bottom heat at starting by breaking well. Provided there is a bed about 3 feet deep and 4 feet in width, the pots may be raised upon bricks in pillar fashion, so that their rims are slightly higher than the pit edge, and so that the pots will be in the centre of the bed. Leaves being placed in to fill the pit, a gentle warmth will be afforded, and the roots will pass from the pots into the leaves. The temperature at the roots ought not to exceed 75°, and in the atmosphere 50° to 55° by artificial means, until the buds swell, then gradually increase it to 60° or 65° when they are breaking. Press the canes to a horizontal position to secure their breaking regularly. Damp the house and canes in the morning and afternoon. To have Grapes ripe in March the Vines should not be started later than the early part of November.

Early-forced Houses.—Vines that are to be forced to furnish ripe Grapes in March or early in April should be started by the middle of November. It is not advisable to start permanently planted Vines so early where there is convenience for growing some in pots, as it is a great strain on the energies of the plants through their having to make their growth at the duldest period of the year, and to rest at the hottest. The house after pruning should be kept cool and dry, and the outside border protected from autumn rains by covering them before the ground is chilled. A good covering of dry leaves, with a little litter to prevent the leaves blowing about, is an effective protection, and if tarpaulin is employed to throw off heavy rains and snow, nothing need be done to outside borders, and they need not be covered until they have been well moistened by the autumn rains, yet before they become soddened and much reduced in temperature. Where, however, fermenting materials are available they are a great aid in forcing operations, and especially so for placing inside the house to generate and maintain a genial condition of the atmosphere, without recourse to so much fire heat or sprinklings

from the syringe. The materials need not be used until the house is closed, but they will need to be thrown into a heap a week or ten days, previously turned and moistened if necessary. Three parts of Oak or Beech leaves to one of stable litter will give a more suitable warmth and ammonia vapour than all dung. Mix the materials well together when thrown into the heap, damping if dry, turning when getting warm, again damping if necessary, and when warmed through they are fit for placing in the house.

Young Vines.—When those have a disposition to keep on growing to a late period they may be checked by stopping the shoots moderately and facilitating the ripening of the wood by a high and dry temperature by day, shutting off the heat and keeping the ventilators open by night.

Late Grapes.—These will be thoroughly ripe if they were assisted in spring by fire heat, which is much preferable to having to maintain a forcing temperature after October comes in to secure the ripening of the fruit. In the latter case the temperature must not be less than 70° to 75° by day, and 65° at night, falling 5° through the night, allowing an advance of 80° to 85° from sun heat, continuing this until the Grapes are ripe—at least, until the wood is brown and hard. The fruit being thoroughly ripe—in which state only can the Grapes be expected to winter satisfactorily—and the wood being well matured, all sprays or laterals may be removed down to the main buds, ventilating freely on all favourable occasions. Fire heat will then only be necessary to prevent the temperature falling below 50°. To prevent dust settling upon the berries raking or sweeping must not be practised. Mats or clean dry straw laid over the inside borders will to some extent prevent evaporation, assist in keeping the atmosphere dry, and prevent the soil cracking. The outside border must be covered if the Grapes are to keep satisfactorily. Glass lights are best, wooden shutters good, and tarpaulin over dry bracken or straw answers well. A thick thatch of straw or bracken is very serviceable.

MELONS.—Water must be given very carefully, but the latest plants with fruit swelling must not be allowed to become dry at the roots. Keep up moderate moisture by damping every morning and at closing time, earthing the plants as required. Remove all superfluous growths as they appear, and maintain a temperature of 65° to 70° at night, 70° to 75° by day, up to 85° or 90° with sun. Keep the bottom heat at about 80°. Fruit ripening will be the better of a little extra heat and a little air constantly; a dry state at the roots, but not so as to cause the leaves to flag, accelerates the ripening process. To insure quality at this season—indeed, at any time—the foliage must be kept thin, all superfluous laterals being cut out, so as to afford the principal foliage the benefit of the autumn sun.

In manure-heated pits and frames no water will be required after this. Keep the frames well lined, admitting a little air constantly, which, with the fruits raised well above the surface of the bed, will do much to impart flavour. Any fruit it is wished to keep for a time should be cut when changing with a good portion of stem, and be kept in a dry airy room or house; or if wanted to ripen at once they may be placed in a warm house in the full sun, and they ripen better than in frames or pits devoid of artificial heat, and although they may not be as full flavoured as those ripened on the plants in a good heat, they are welcome additions to the dessert.



APIARIAN NOTES.

YIELD OF HONEY.

It is gratifying to learn from many persons, particularly on the west coast, that their bees have done well, and from some, "This is the first year we have had honey." I have been an eye witness to many of the supers secured, and they could not be finer, the yield from each hive being nearly 30 lbs. Their owners are pupils of my own. Some bee-keepers near the successful ones referred to have not secured 1 lb. A Renfrewshire bee-keeper's hives have in some instances given three supers of the Stewarton type sealed out, and his bees are independent of feeding. Such cheering news, in what appeared a disastrous year, makes many of us hopeful of the future; but before September brought us bright and summer-like weather it was not, as we have been told, "the worst year for bees in the remembrance of man." Frequently in past years we have had to feed our bees during the whole summer to keep them alive, whereas this year no such thing was necessary beyond what was required to keep up the breeding for the Heather. That we have had excessive rainfalls with a very low temperature no one can deny. In addition to many worse years, I remember in 1844 that during July and August there was not a dry day, and

very few before and after these dates, while in June and July heavy showers of rain fell.

PREPARING FOR WINTER.

No time should be lost in getting all stocks prepared for standing the winter, well furnished with stores, defended from internal and external moisture, and secured from being blown over by the wind. An iron rod or wooden stake driven into the ground close to the hive and secured by a cord or tying wire is all that is necessary to prevent the highest hive from being blown down, and is at all times neat and handy.

VENTILATION.

My mode of ventilation is well known. The greater part of my plan appeared in the pages of this Journal about thirty years since, in the same part as Langstroth's method appeared, which was similar to mine, but dwelt principally on insensible upward ventilation, as essential to-day as it was then, even with our method of under ventilation. It is perhaps necessary to state these facts, because an apiarian has asserted that insensible upward ventilation is unnecessary since he has adopted the "3-inch eke" and not more than "1-inch entrance." If he would simply cover that eke with perforated zinc it would make the arrangement perfect; but why does he advise that plan to be adopted when a short time since he recommended wintering bees in hives with "wide entrances?"

A TEST.

Cover your hives well upon the top with dry meadow hay with or without the improved method of under insensible ventilation. Place close upon the top of the dry hay any waterproof material, and note how short a time elapses before it becomes thoroughly saturated with damp and mould. But try the opposite, and raise the waterproofing a little above the dry material, and then examine and see how dry and comfortable the bees must be beneath so dry a covering.

The perforated floor allows all debris to fall away from the bees, and rids them of parasites and moths, and the plan advised by Mr. McConnel of Annan of placing dry peat beneath the zinc prevents the condensed moisture on the floor rising amongst the bees on the slightest increase of temperature, keeping the bees comfortable, free from disease, and at rest during the most trying time of their existence, which ultimately proves profitable to those who cared for them. Neither relinquish the one form of ventilation nor the other, but let both go together, and you will all soon learn why there are so many different methods and opinions in the management of bees.

BEES INTOXICATED.

This is a subject to which I intended to have turned my attention had the summer been a fine one, as I have frequently witnessed a half-dormant bee upon many different flowers, and have often observed humble bees in a sleepy state upon some that the hive bee visited with impunity. Writers often classed both sorts together. I am inclined to the belief that there is something else that stupefies the bees seen upon these flowers than the plant or flowers the intoxicated bees are seen upon. I have observed the remarks by Mr. S. Arnott at page 266. Although I grow two varieties of *Sedum Fabaria*, I have never observed an intoxicated bee upon any of them, but have done so upon the yellow flowered Stonecrops. The first mentioned are in flower with me at present. As soon as the stormy weather abates, and bees are again working, I will watch their proceedings upon these *Sedums*.

CURE FOR FOUL BROOD.

Formic acid, as a certain cure for foul brood, has been advocated for some time past, and discussed in various journals, and as might be expected with a new thing, old cures are condemned. We hope it will be efficacious. The Canadians have passed an Act of Parliament for the purpose of having the disease suppressed. It appears the foul brood inspector has been busy

for several months overhauling diseased colonies, and applying remedial measures under the Act, which authorises diseased colonies "to be destroyed by fire;" but he has not done so, finding it unnecessary, as he cures "by a simple hygienic process, and without the aid of the chemist, the druggist, or drug doctor." I am sure it will please none more than the Editor of this Journal to learn that "the method of cure is briefly the starvation plan, the only one in our large experience which we practised with success." Like other good things, and modes of good management, it appeared first in the pages of this Journal, and was known as the "purgatorial process" by "A Renfrewshire Bee-keeper," and as a further immunity from the disease our method of ventilation as described above. Sometimes much hangs by a little, and a very little stroke of mismanagement will ruin a whole apiary.

ROBBING.

A meddling bee-keeper commenced manipulating amongst his bees at an improper time for profit to himself, and although the best honey days of the season, and unlikely time for bees to rob, they set to it, and but for my presence some of my best hives would have been destroyed by the careless and imprudent act.

SHORT STORES.

No matter what time of year it is, colonies with short supplies of meat dwindle away until they are so much reduced as to be worthless. What appeared to be fairly strong colonies situated a little distance from my own at the moors, which I saw daily, from being under supplied dwindled gradually until they were either robbed out or unable to gather any honey when the weather improved. At a little distance from their hives dead bees lay in great numbers upon the stone dykes, the ground, and upon flowers. My whole experience is simply what I have taught, and which Art will neither forward nor frustrate. Nature and the weather are the controlling factors. So much has been said about swarming and its prevention that it is needless to repeat further than in some localities bees swarmed in September almost to a hive, the exceptions being those having young queens. But there are exceptions to this rule which I hope to explain in a future article.—
A LANARKSHIRE BEE-KEEPER.



* * * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Grapes Falling (R. H. R.).—If you turn to page 261, our issue of the 18th ult., you will find a reply given to "J. S.," which appears exactly applicable to your case. Relative to your other inquiry, *Stephanotis* flowers are not in season now. On turning to the market list, published in May, we find the prices quoted 3s. to 5s. per dozen sprays.

Retarding Chrysanthemums (Novice).—We do not know that you can do better than carry out the practice you are adopting of placing the plants in the coolest position you have on warm days. The development of the blooms depends more on the weather than on "feeding," and unless the temperature is unusually high during the

present month, we think most, if not all, the blooms may be kept in good condition till the time you require them. The question of stimulants must be decided in accordance with the state of the plants, but you had better avoid the too free use of liquid manure.

Two Peaches for Forcing (H. C. B.).—All points considered there are not, perhaps, two better Peaches for forcing than Hale's Early and Royal George. Alexander ripens in advance of Hale's Early, and is large and of good colour, yet though brisk and juicy has not the quality of those named. If you want the earliest fruit you may plant Alexander and omit Royal George, which, however, is the surest forcer of all Peaches. Alexandra differs from Alexander, and is a splendid Peach of the Noblesse race, but not suitable for very early forcing, being subject to cast its blossom buds when started early in the season.

Coe's Late Red (W. B.).—Dove Bank is an earlier and larger Plum; yours is Coe's Late Red, also known as St. Martin and St. Martin Rouge, which is thus described in the "Fruit Manual":—"Fruit, medium sized; round, marked on one side with a deep suture. Skin, bright purple, covered with a thin blue bloom. Stalk, three-quarters of an inch long, not depressed. Fruit, yellowish, firm and juicy, with a sweet and sprightly flavour, and separating from the stone. A late Plum, ripening in the end of October, and hanging for a month or six weeks later; this is a valuable variety. Shoots downy.

White Mould in Mushroom Bed (J. W. C.).—We suspect you have dried the manure too much. Read carefully what is said on this subject in the sixth edition of "Mushrooms for the Million." It is well also to remember what Mr. R. Gilbert says in the same work—namely, "To gather horse droppings, then lay them in a shed, dry them, and turn them till there is no strength left in them, and then to expect Mushrooms, is to me something like madness." You ought to have moistened the manure before making the bed. We do not know whether you can bring it into the requisite condition now, but you can try, and it would be advisable to use weak clear liquid made from fresh horse manure, at a temperature of 90°. The beds should be covered to prevent their drying.

Iceland Poppies (W. E.).—Sturdy plants, the result of thin sowing, or early thinning, usually pass the winter if transplanted early in firm well-drained soil. Ours were transplanted a foot apart a month ago, and this work cannot be done too soon now. Too rich and wet soil, and plants made tender by growing them too thickly together, are the chief causes of the collapse of these plants. You will perhaps do best to transplant in a bed a little smaller than your frame, so that this can be placed over them in case of need in very wet and alternate frosty weather in winter, but avoid "coddling." If you state the kinds of fruit trees to which you refer, also about their age, size, and especially the length and thickness of the summer shoots, we will advise you on root-pruning. Your question as put cannot be answered usefully.

Pruning Fruit Trees (St. Julien).—The advice given not to cut back the leaders of oblique cordon trees is sound. There is much more likelihood of the buds pushing fruitless growths if the leaders are shortened than of the stems being bare if not cut back. In nineteen cases out of twenty blossom buds form on the stems when not shortened, always provided the trees are not crowded by training them too closely. Until horizontal trained trees reach to the extent desired along the wires the leaders need not be shortened, unless the ends are very soft or terminate in a fruit bud. If we understand the condition of your trees the "leaders" to which you allude as being 2 or 3 feet above the top wire come under the category of breast wood, that is they issue from the sides of the main branches, and are not a mere elongation of the ends. In this case they ought to have been suppressed long ago. Cut them back at once to two or three leaves at the base of each, and do not let similar shoots grow so wildly another year. Perhaps the trees need root-pruning, but on this we cannot advise without knowing their age, size, and general condition.

Peach and Vine Border Making (J. R.).—The turf is a dark loam, evidently of vegetable origin, containing little silicious or calcareous matter. We should therefore mix 1 ton of quicklime with every ten cartloads of the turf when in good working order, mixing thoroughly. This for both the Peaches and Vines. Then for a Peach border add two cartloads of clay, dried and pounded, and one cartload of old mortar rubbish freed of pieces of wood to every ten of the turf. Half a bushel each steamed bonemeal or ground coprolites, and wood ashes may be added with advantage to every cartload of soil. Incorporate all well together, making the border in a dry time. It would be best to confine the roots to the inside border in the first instance, bricking up the arched openings. A 4 feet 6 inches width of border is ample to begin with, and 8 to 10 feet of border is quite sufficient at any time for trees in a house of the width shown on the plan, the trees we presume being planted in front of the house, and trained to a roof trellis about 1 foot from the glass. A 6 feet width of border inside and 4 feet width outside would answer very well. If you have trees on the back wall there is still ample width to make a border for them, but with trees trained to a roof trellis trees on the back wall will do very little good after the first two or three years. There is no reason whatever why the Peach border should come up to the walk. Have that where most convenient or slightly, but do not make the Peach or Vine border to suit any pathway. For the Vine border add two cartloads of old mortar rubbish to every ten of the loam, treated as before advised, and one cartload of

clay, as finely divided as possible, and these thoroughly incorporated will form a suitable compost for the Vine in your case. Half a ton of crushed bones may be added to the fourteen cartloads and 15 bushels of charcoal, but they are not necessary, especially the bones, which are best given as dust at the surface, or along with wood ashes as advised for the Peach border, doubling the proportions. The Vine border should be made in parts as advised for the Peach border, the inside first, say a 6 feet width, and add a 2 feet breadth annually or biennially as required, and when the inside is occupied with roots then make the outside border, and 9 feet width of that will be better than a great mass of soil, which for the most part is of no practical use to the Vines, and does far more harm than good.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (S. and M.).—The Apple closely resembles Lord Suffield. (W. B.).—It is Coe's Late Red. See reply above. (Vesta).—3, Braddick's Nonpareil. 4, Hanwell Souring. 6, Boston Russet. The others not known. (Constant Reader).—1, Cellini. 2, Winter Hawthornden. 3, Striped Beefing. 4, Sturmer Pippin. 5, Cox's Orange Pippin. 6, Carraway Russet. (G. L. Court).—Lamb Abbey Pearmain. (J. J. Candy).—16, Dumelow's Seedling. 13, Winter Greening. 17, Red Autumn Calville. 7, Trumpington. 15, Quite rotten. Specimens not good and difficult to recognise. (W. J. Mees).—3, Golden Spire. 6, Reinette du Canada. We cannot recognise the others. (A. B.).—1, Fondante d'Automne. 2, Beurré Capiaumont. 3, Louise Bonne of Jersey. 4, Manx Codlin. 5, Ribston Pippin. 6, Ecklinville. You have sent us very deformed specimens.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens should be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (Pelargonium).—1, Phytolacca decandra; 2, Polygonum cuspidatum; (H. W. W.).—1, Begonia fuchsioides; 2, Begonia Sutherlandi; 3, Insufficient; 4, Begonia ferrea; 5, Begonia natalensis; 6, Begonia weltoniensis. (Inquirer).—The Lily is Lilium lancifolium album. (W. R.).—1, Davallia bullata; 2, Davallia Mooreana; 3, Hypoderris Browni; 4, Hypolepis distans. (M. V.).—1, Aster novæ anglæ; 2, Aster bessarabicus; 3, Helianthus decapetalus; 4, Helianthus multiflorus; 5, Chamaepeuce diacantha.

COVENT GARDEN MARKET.—OCTOBER 8TH.

MARKET quiet, with no alteration.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.	
Apples, $\frac{1}{2}$ sieve	2	6	to	6	0	Lemons, case	35	0	to 45	0
" Nova Scotia and						Melons, each	1	0	2	0
" Canada, per barrel	0	0	0	0		Oranges, per 100	4	0	9	0
" Tasmanian, p. case	0	0	0	0		Peaches, dozen	1	0	8	0
Grapes, per lb.	0	9	3	0		Plums, $\frac{1}{2}$ sieve	4	0	9	0
Kentish Filberts, 100 lbs.	0	0	50	0		St. Michael Pines, each..	2	0	6	0
" Cobs	0	0	50	0		Strawberries, per lb.	0	0	0	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes, dozen	0	0	to	0	Mushrooms, punnet ..	1	6	to	2
Asparagus, bundle	0	0	0	0	Mustard & Cress, punnet	0	2	0	0
Beans, Kidney, per lb. ..	0	3	0	0	Onions, bushel. . . .	3	0	4	0
Beet, Red, dozen	1	0	0	0	Parsley, dozen bunches	2	0	3	0
Brussels Sprouts, $\frac{1}{2}$ sieve	0	0	0	0	Parsnips, dozen	1	0	0	0
Cabbage, dozen	1	6	0	0	Potatoes, per cwt. ..	3	0	4	0
Carrots, bunch	0	4	0	0	" New, per lb. ..	0	0	0	0
Cauliflowers, dozen. . .	2	0	4	0	Rhubarb, bundle	0	2	0	0
Celery, bundle	1	0	1	3	Salsafy, bundle	1	0	1	6
Coleworts, doz. bunches	2	0	4	0	Scorzoneria, bundle ..	1	6	0	0
Cucumbers, doz.	2	0	3	6	Seakale, per bkt.	0	0	0	0
Endive, dozen	1	0	0	0	Shallots, per lb.	0	3	0	0
Herbs, bunch	0	2	0	0	Spinach, bushel	1	0	2	0
Leeks, bunch	0	2	0	0	Tomatoes, per lb. ..	0	3	0	6
Lettuce, dozen	0	9	1	3	Turnips, bunch	0	0	0	4

CUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	2	0	to	4	0	Marguerites, 12 bunches	2	0	to 6 0
Asters, per bunch, French	1	0	1	6		Maidenhair Fern, dozen			
" English, 12 bnchs.	3	0	6	0		bunches	4	0	9 0
Bouvardias, bunch ..	0	6	1	0		Mignonette, 12 bunches..	1	0	3 0
Carnations, 12 bunches ..	6	0	9	0		Pansies, dozen bunches ..	1	0	2 0
" 12 blooms ..	1	0	2	0		Pelargoniums, 12 trnses	0	9	1 0
Chrysanthemum, 12 blms.	1	0	3	0		" scarlet, 12 bnchs	3	0	6 0
" 12 bunches	4	0	12	0		Pinks (various), doz. behs.	6	0	9 0
Cornflower, doz. bunches	1	6	3	0		Primula (double) 12 sprays	0	6	1 0
Dahlias, dozen bunches..	2	0	4	0		Roses (indoor), dozen ..	0	6	1 6
Eucharis, dozen ..	2	0	4	0		" Red (Eng.), 12 beh.	2	0	6 0
Forget-me-not, doz. bnch.	1	6	4	0		" Red, 12 blooms ..	1	0	2 0
Gardenias, 12 blooms ..	2	0	4	0		" Tea, white, dozen..	0	6	2 0
Gladiolus, 12 bunches ..	6	0	12	0		" Yellow	2	0	4 0
Gypsophila, per bunch ..	0	6	1	0		Stocks, dozen bunches ..	0	0	0 0
Lapageria, 12 blooms ..	2	0	4	0		Sweet Peas, 12 bunches	1	6	3 0
Lavender, dozen bunches	3	0	5	0		Tuberose, 12 blooms ..	0	3	0 9
Lilac (French) per bunch	5	0	6	0		Violets (Parne)	2	6	3 6
Lilium, various, 12 blms.	1	0	2	0		" (dark)	1	0	2 0
" longiflorum, 12 blms.	4	0	6	0		" (English), doz. bnch	1	0	2 0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Aralia Sieboldi, dozen ..	6	0	12	0	Geraniums Scarlet, p. doz.	2	0	6	0
Arbor Vitæ (golden) doz.	6	0	8	0	Heliotrope, per doz.	4	0	6	0
Asters, dozen pots ..	6	0	9	0	Hydrangea, doz. pots ..	9	0	18	0
Calceolaria, per doz.	4	0	6	0	Lilium lancifolium, doz.	9	0	18	0
Chrysanthemum, per doz.	6	0	24	0	" longiflorum, doz.	0	0	0	0
Climbing Plants, various,					Lily of the Valley, 12 pots	0	0	0	0
dozen pots ..	4	0	9	0	Lobelia, per doz.	0	0	0	0
Dracæna terminalis, doz.	24	0	42	0	Marguerite Daisy, dozen	6	0	12	0
" viridis, dozen ..	12	0	24	0	Mignonette, per dozen ..	4	0	6	0
Erica, Cavendishi, per pt.	0	0	0	0	Musk, per dozen ..	0	0	0	0
" various, dozen ..	12	0	18	0	Myrtles, dozen ..	6	0	12	0
Euonymus, var., dozen ..	6	0	18	0	Nasturtiums, dozen pots	0	0	0	0
Evergreens, in var., dozen	6	0	24	0	Palms, in var., each ..	2	6	12	0
Ferns, in variety, dozen ..	4	0	18	0	Pelargoniums, per doz.	6	0	12	0
Ficus elastica, each ..	1	6	7	0	Rhodanthe, per dozen ..	4	0	6	0
Foliage plants, var., each	2	0	10	0	Stocks, per doz.	0	0	0	0
Fuchsia, per doz.	4	0	9	0	Tropæolums, various, per				
Geraniums, Ivy, per doz.	0	0	0	0	dozen ..	0	0	0	0



MICHAELMAS THOUGHTS.

FARMERS of arable land have now to thoroughly consider their scheme of cropping for another year, and well will it be for them if fodder crops enter largely into it in view of reducing the area of land under corn crops, of reducing labour, and of increasing their flocks and herds. What to grow and how to do it become increasingly important every year, and it is most certainly the business of every farmer to make himself master of the best and latest information in a matter of such vital importance.

We are writing this article in a Leicestershire farmhouse very early in the morning, for we like rising with the lark, and we heard the rattling of the milk carts at daybreak, when the worthy farmer and his assistants were off to the milking on an outlying pasture. This farm is entirely in permanent pasture, not a single field is there under the plough. A couple of heavy carts, and a light milk cart, with implements for mowing and milking, is all the farming plant required out of doors. Indoors the making of most excellent Stilton cheese is in full swing, and it is to its production that most of the farm is devoted, and much care and skill are brought to bear upon the entire process from the making to the ripening of the cheese.

With the farm in permanent pasture results are much affected by weather, and complaints of a shortness of keep caused by a dry September are general in this district. On this farm most of the sheep are, in local phraseology, "mobbed out" by cows and cattle, and they have been sent away upon hired keep for awhile. Here it is that one sees the evil of laying down the whole of a farm to permanent pasture. Anything like useful auxiliary crops is then an impossibility, and yet it is a certainty that a fair proportion of such crops enables a farmer to keep more stock to combat a drought successfully, and to avoid sending away animals upon hired feed. It does more; it enables him to afford his stock a more liberal diet, so that cows give more and richer milk, and young stock are maintained in the very pink of condition, which is assuredly the most profitable. When this cannot be managed, the animals have to endure a series of trying alternations of abundance and scarcity. Calculations based upon a full bite upon pasture are upset by a drought, and then animals go short, and there is a falling off in condition and a serious curtailment of the milk yield. If stock is sold on such an emergency it is done at a sacrifice, which might have been avoided if there had been such crops as Lucerne, mixed seeds, Tares, Green Maize, and Cabbage to fall back upon. A field of Winter Oats harvested in July and prepared for use at once by thrashing the corn and chaffing the straw as it was carted from the field, would have given a fine store of most wholesome nutritious food to fall back upon all through the autumn. Mention of this to our Leicestershire friend brought to light the curious fact that he, though born and bred a farmer,

had never even heard of Winter Oats, and had never seen a crop of Sainfoin, Green Maize, or Trifolium incarnatum. He is, nevertheless, a successful farmer, and why he is so remains to be told in some future paper.

It is not to be expected that pasture will be lightly broken up, but it is certainly a mistake not to have enough arable land to produce sufficient food for home consumption, and it will be well this Michaelmas to consider if any particularly poor and unprofitable meadow might not be ploughed early in winter, sown broadcast with Oats early in spring, and subsequently turned to account for any of the green crops we have mentioned. A crop of winter Tares might follow the Oats, and if they could be spared to be consumed in folds on the land by sheep, the land would be much improved, and the sheep would be withdrawn from the pasture to the advantage of the other live stock.

Co-incident with plans for the production of more food for live stock should be others for weeding out unthrifty animals, and their speedy disposal at any price. Keep no inferior animals, and pray do avoid overstocking. In most parts of the country green food and roots are so abundant and cattle are so cheap that the temptation to purchase a few more is very great. Better, far better, is it to keep well within our means, to have a surplus of food rather than a scarcity, and above all things avoid the annoyance and loss of having to part with live stock at a sacrifice from the food supply failing at midwinter.

WORK ON THE HOME FARM.

October has come in with high wind and pelting showers, and the cold air under the gloomy storm clouds was a reminder of the speedy decline in temperature which we must now expect. We are quite ready for the change, with the yards and lodges all in good order, plenty of litter at hand, and an ample store of winter food. Yet, according to the views which the ordinary Leicestershire farmer embodies in his practice, very much of our care and its attendant expense for the comfort of live stock in winter is as uncalled for as it is unnecessary. No matter how inclement the weather, his cows, aye and his young stock too, are out on the pasture with no other shelter than hedge or coppice affords. On most farms there is really no choice in the matter, for a hovel or two comprise the sum total of outbuildings. We do not hesitate to say both custom and practice are at fault here, and results prove us to be right; for we have heard a sad account of losses from a variety of ailments, and especially from abortion. Let us look into this matter closely. The Stilton cheese season will soon be over, butter making will follow for a few weeks, and then most of the cows will become dry and continue so for nearly three months, as they are timed to calve in spring about the beginning of the cheese season. The terrible exposure to which they are subjected in the depth of winter very frequently proves so exhaustive that abortion is quite a common thing, and yet it is termed a mystery.

Readers of the Journal who are managers of home farms, do all in your power to protect your stock from exposure to cold and wet, for both are pregnant with evil, and both cause much suffering. By all means see that all your stock have pure water, pure air, plenty of exercise, wholesome food, and, to crown all, efficient shelter. As the nights become colder gradually bring stock into the yards, till they are at length settled down for the winter. We have held upland grazing as much in reserve as we could for the sheep in winter, and doubt not our sheep shelters will tend as usual to promote the comfort and health of the flock.

METEOROLOGICAL OBSERVATIONS.

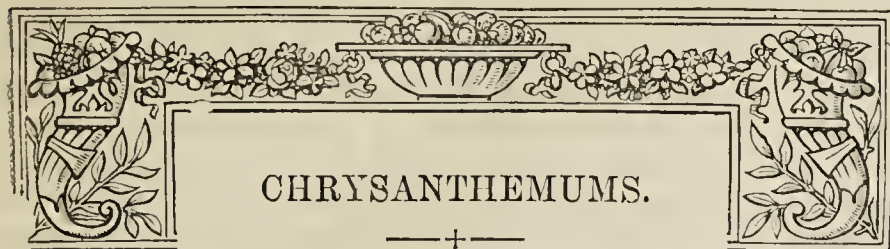
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain	
1890. September and October.		Barome- ter at 32° and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		
			Dry.	Wet.			Max.	Min.	In sun.		On grass
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.	
Sunday	28	30.246	53.7	57.0	S.W.	58.8	71.3	54.8	100.3	54.2	
Monday	29	30.113	58.7	55.3	S.W.	58.1	64.4	51.6	86.7	47.8	
Tuesday	30	29.995	60.3	55.0	S.W.	57.9	66.0	55.2	107.2	51.2	
Wednesday ..	1	29.763	60.4	55.9	S.W.	58.0	63.9	57.0	97.4	53.1	
Thursday	2	30.323	43.7	43.9	W.	56.6	61.1	39.8	102.4	34.0	
Friday	3	30.312	53.7	49.0	W.	54.9	66.1	43.7	106.1	39.1	
Saturday	4	30.218	59.1	54.9	W.	54.9	68.5	49.0	109.4	43.8	
		30.139	57.1	53.0		57.0	66.2	50.2	101.4	46.2	
										0.032	

REMARKS.

28th.—Fine and bright, especially in afternoon.
29th.—Brilliant early; overcast after 9 A.M.
30th.—Brilliant throughout.
Oct. 1st.—Overcast and squally, with occasional spots of rain in morning; showers from noon to 1 P.M., and at 2.50 P.M., otherwise fine and bright in afternoon and evening.
2nd.—Almost cloudless throughout, but colder.
3rd.—Brilliant throughout.
4th.—Cloudy early; unbroken sunshine from 8.30 A.M.
The fifth consecutive week with a temperature above the average. Practically rainless, and with an exceptional amount of bright sunshine.—G. J. SYMONS.



SCARCELY has the bustle of the fruit season subsided when attention is turned to the floral favourite of autumn—the Chrysanthemum, and active preparations are in progress for a still busier period. With a renewed and ever-increasing pleasure our eastern friend is welcomed, especially in towns, and it is difficult to imagine now what the horticultural November would be without the attractions it provides. It is not surprising that societies and shows devoted to the Chrysanthemum flourish and increase, for the plant stands without a rival in regard to the time of year when its flowers brighten our gardens, houses, or exhibitions. Comparisons are said to be odious, but the Chrysanthemum has often been compared with the Rose in popularity and variety, and has been generally entitled “The Autumn Queen” with good reason; but had the Chrysanthemum produced its flowers in June and July it would never have attained its present position in public favour, and would have ranked far below the acknowledged queen of summer—the Rose. Happily there is no need for rivalry, and we must be thankful to have the dullest and most depressing month in the year rendered bright and busy by the beauties and interest of Chrysanthemums in their numerous variations of form and colour.

Ample reason exists for the continued popularity of the Chrysanthemum in the fact just mentioned, and we find the number of societies concerned with it steadily increasing annually. There are not less than 100 societies in Great Britain now devoted to the encouragement of cultivators of the plant, and if to these are added the societies being formed in the Colonies, on the Continent, and in the United States (the latter of which are advancing rapidly), the total would probably be more than doubled. It is satisfactory, too, to observe that the majority of the shows held by these societies in our own country are well supported, and as regards the more important displays the attendance is considerably larger than is obtained at summer shows. Examples of this have been afforded both in the north and the south—at Hull and Portsmouth, where 10,000 persons have been admitted during the three days of the respective exhibitions. This is encouraging alike to the officials connected with the societies and to the exhibitors, and, moreover, a useful public service is being performed in drawing attention to so accommodating a plant for towns.

The increase of societies and the liberal prizes offered for plants and cut blooms, have done much to stimulate the culture of Chrysanthemums, for it has afforded many growers an opportunity to recover a portion of the expenses incurred in the production of exhibition specimens. Competition, too, excites a keener interest, and induces further efforts on the part of the defeated ones, thus tending to materially advance the cultivation. The result is that as the growers become more numerous every year the general system of culture improves, and the competition becomes keener at all the principal shows where the most substantial prizes are offered. It is not uncommon to find ten or twelve exhibitors in one cut bloom class now, when ten years ago it would have been difficult to secure three; in some cases indeed as many as twenty have staged in one class where only four prizes were offered. This leaves no chance for inferior productions, and the average character of cultivation has in consequence been raised far above that of a few years since. Perhaps there is some

truth in the statement that advance in size of bloom has been more marked than improvement in quality, but it applies with greater force to the incurved than to the Japanese. It is much more difficult to combine the two characters of size and quality in the former than in the latter, and unusually large incurved blooms are very apt to be coarse and deficient in the refinement so essential to their perfect representation. It must be admitted as a fact, which all florists will deplore, that the incurved varieties of Chrysanthemums are not advancing in the same degree as the Japanese, indeed it appears that some decadence has occurred. This can be partially explained by the consideration of two or three matters, one being that the Japanese are more easily grown to fair condition, they are more reliable, there are more varieties to select from, and they afford a greater range of colour variation. With so many qualities to recommend them it is not surprising that the Japanese Chrysanthemums have advanced so rapidly in public favour, outdistancing their older rivals.

This brings us to the consideration of an important matter outside all exhibition interests, and that is the value of the Chrysanthemum in nearly all its types for decorative purposes in conservatories or for homes. This has helped the Japanese varieties greatly, as they are of conspicuous value for grouping or general decoration, either as plants or cut blooms, and the demand of recent years has increased in this way so enormously that the importance of an easily secured supply at a dull season cannot be overestimated. The uncommon and fantastic forms of the Japanese have rendered them favourites with many, and the general brightness of moderate-sized blooms better adapts them for ordinary floral decoration than most of the other sections. An exception must, however, be made of the single varieties, which are charming for vases and stands in almost any position, but they are not yet fully appreciated either by cultivators for home displays or by exhibitors, and it is regrettable that some of the societies do not give more encouragement to these varieties. I have seen stands of the “singles” set up both on the exhibition and private tables with the best possible results, the gracefulness of the flowers and their soft colours eminently fitting them for the work.

The season which will commence in the course of another fortnight will be an unusually busy one for all who are concerned with societies and shows, and many intending competitors are anxiously watching the progress of their plants and blooms. Much after success will depend upon the weather experienced in the next week or two, and cultivators are in some degree at the mercy of the elements. The season up to the past month was not satisfactory, the prevalence of wet sunless days tending to excessive, succulent, immature growth, by no means calculated to give good results. Happily the weeks of bright sunshine we have now had have aided greatly in correcting former evil influences, and the growth has ripened admirably in most cases. Judging by the collections that have come under my observation and by letters received from many correspondents, the tendency is, or rather was, to a somewhat late flowering, but this prospect has been changed as regards some of the hardy growers in the south by the high day temperatures experienced recently. Fearing a sudden severe frost in such clear weather many have hastened to house their plants, and the effect of a summer sun has been to forward the bloom buds rapidly. A continuation of this warm weather for another week or two will considerably disturb the calculations of several would-be exhibitors.

It is most difficult to generalise in such matters, however, and an example of this was afforded by a journey last week amongst a few of the noted Chrysanthemum gardens. In two establishments particularly, three or four miles apart, in the same county, and equally well situated, a great difference was noted in what may be termed “the time” of the buds. One series of plants could not have been less than a fortnight later than the other, if left unaided by special attention, but while in one case the grower will do his

utmost to hasten the due expansion of the flowers, the other will be equally engaged in retarding those under his care. In both instances there is danger of bad results, but the former is the more serious, and will need the closest attention to avoid mishap. When a cultivator has entered for a particular show, and he finds his blooms are late, he will probably, if a novice, become nervous, and in endeavouring to bring his blooms up to time will employ too much heat and keep his houses too close. This is a great mistake, and must inevitably lead to disaster, the flowers opening weakly, thin, and irregular, as well as being much more liable to that mysterious malady "damping" than if they expanded under cooler and more airy conditions. The Chrysanthemum will not submit to forcing, as usually understood, and I have in past years seen some most promising collections spoiled by undue haste in this respect. This is a note of warning that is not so likely to be needed this season as regards the southern growers, but there are some exceptions, as already mentioned, and nothing is ever gained by inconsistent hurry. "Hasten slowly" is a motto equally as well adapted for Chrysanthemum growers as it is for the affairs of life generally.

Retarding the blooms for the earlier shows will be difficult if warm bright weather continue, but it will not be so serious if the weather remains dry. In the metropolitan district the unwelcome fogs have already made their appearance, but the buds are not yet sufficiently advanced to be injuriously affected. As the blooms expand slight shade for an hour after the fog disperses has been proved to be beneficial in several instances that have come under my notice, and has assisted in preventing scalding, which is often the precursor of "damping." Another matter which assists in preventing blooms keeping well is having them too near the glass where they are subjected to sudden and frequent fluctuations of temperature, which must affect such a delicate structure as the florets of any section of Chrysanthemums, but especially those termed "large exhibition" varieties, which are most in danger of being grown too luxuriantly.

Some curiosity is being expressed as to the behaviour of the novelties which were brought into notice last year, and it will not be surprising if a few of them are a little disappointing, not from lack of merit themselves, but because they have been propagated so extensively that the constitution of the plants must have been weakened to some extent, and tests the skill of the best grower to produce good results from a weak cutting. A few blooms of Mrs. Alpheus Hardy have been seen, but not at their best, though it will probably appear in many of the exhibition stands this year. A pink sport or form of this is already talked about, and it is rumoured that a series of forms of the same type may be expected. Many will be desirous to see how the variety Robert Cannell preserves the characters it displayed when first shown, and the resolution not to send it out this year was undoubtedly a wise one. Really meritorious additions to the incurved list come, however, so slowly that they are the more urgently sought. It is doubtful if there will be many novelties from the Continent of sufficient value to supersede any of those already in cultivation, for every year it becomes far more difficult to obtain any advance on those previously sent out. The seedlings raised from seed saved in this country will be watched with much interest, especially as one of the parent varieties is Edwin Molyneux. Seedlings from imported seed are numerous, and may be expected to yield something good, though the prizes are necessarily small in proportion to the blanks.

Though all the principal societies are offering good prizes, and have provided comprehensive schedules, the great event of the year will be the centenary celebration by the National Society, and it is confidently expected that the available space in the buildings devoted to it at Westminster will be taxed to the utmost. The several other attractions of Conference, banquet, and conversazione, are also likely to induce a large gathering of Chrysanthemum admirers. At this and all the shows the officials charged with the arrangements have a formidable task to perform, and

a good deal of mutual forbearance and consideration is necessary to ensure a smooth execution of details. Exhibitors can help by sending in their entries early, and by staging their exhibits in good time on the morning of the Show. Having the arrangements completed promptly for the judges to commence at the appointed time is important, for more mistakes are caused in this and other matters by hurried work than in any other way. The calm men, whether show officials, exhibitors, or judges, invariably do the best work, and this opinion is formed on a wide experience amongst all classes. It is a character that is worth cultivating, especially by those who are just entering the Chrysanthemum ranks in either of the capacities named.—LEWIS CASTLE.

THE CULTIVATION OF APPLES FOR MARKET.

[A paper read by Mr. G. Hammond, Brentwood, at the British Fruit Growers' Meeting, October 15th.]

It is not without considerable hesitation and diffidence that I appear before you this evening to read a paper upon this subject, knowing as I do that many older and abler men than myself have already dealt with it, and I can hardly expect to say anything new. Still I am aware that instruction in the cultivation of fruit as in other things must be line upon line, precept upon precept, here a little and there a little; and as it is possible that I occupy a somewhat different position, and therefore see things from a different standpoint from many who have preceded me, I hope it may not be altogether wasting your time in listening to what I have to say upon the matter in hand.

I wish it to be understood at the outset that my remarks refer to the cultivation of Apples for profit, therefore of course for market, as distinct from the growth of extra large fruit for the exhibition table, or the growth of a large number of sorts for the supply of the gentleman's table and kitchen for the longest possible time. With regard to the cultivation of the Apple one thing has been clearly proved by the recent Show at the Guildhall—viz., that this fruit can be grown, and well grown, over a very much wider area than has been generally supposed, and that although our esteemed Kentish friends may have led the van they can by no means claim a monopoly of either suitable soil or favourable situations for the growth of this fruit, but as in the case of the queen of flowers so also with the most useful of fruits. Although some soils and situations may be naturally better adapted than others, still with a wise selection of sorts, combined with careful and attentive culture, it is possible to succeed almost anywhere between the Channel and the Tweed; nor do I forget that most useful fruit is grown beyond the border, and some of our most useful kinds have come to us thence. Our Secretary also, and his companion in travel, have convinced us that the Apple at least can be profitably grown with care and attention even in the Emerald Isle, and we may hope that some of the labour hitherto spent upon the Potato may be diverted to the growth of the Apple, with the best results of bringing more money into the pockets, better health to the bodies, and greater comfort and contentment to the homes of our Irish friends.

Now the first point in the successful culture of the Apple undoubtedly is "the thorough preparation of the ground before planting." It is not enough simply to make a hole in otherwise unbroken ground just large enough to thrust in the roots, but the whole field, or portion to be planted, should be well stirred to a depth of not less than from 12 to 18 inches. I myself in this matter prefer not to bring up the subsoil to the surface, nor do I think it necessary to insist upon the ground being double-trenched. In my opinion a good preparation may be made at less cost, either with the "steam digger" or by a good ploughing with a subsoil implement of some kind following the plough, and breaking up the bottom of the furrow. This process should, if possible, be repeated, and if the second ploughing or digging can be done crosswise of the fruit so much the better. If the soil be poor a good coating of manure should be carted upon the land before the first ploughing; if the soil be in good condition this may not be necessary.

Having well prepared the ground, the next thing to be done is to mark out the lines in which the trees are to be planted, and at this stage it will be advisable to decide as to what shall be done with the ground—whether it shall be laid down with grass or planted with other fruits, as more room should be given in the case of orchards than in gardens, as I will presently show. The ground should be marked out both lengthwise and crosswise, and may be done either with a marking line and hoe or by an implement made for the purpose, such as may be often seen in the county of Kent. The trees will then, when planted, be equidistant, and straight in every direction.

The selection of the trees will follow next in order, and this depends, both as to the class of trees and also as to the kinds of fruit, upon the decision made as to the future of the ground. If for orchards, then standard trees only should be planted, and these upon the Crab or free stock, and of kinds that can be best recommended by the nurserymen for this form of tree. If the ground be intended for continual cultivation, then in my opinion the best form of tree is what is generally known as "half-standard." These are not so much exposed to the wind, are much more convenient for the gathering of the fruit, and can be grown in a greater variety of sorts, and also upon various stocks.

If the trees are to be well fed and cared for, then I think the best stock will be one of the freer-growing Paradise; these will, I think, best attain the desired end in fruit culture—viz., to grow a fairly good tree while also bearing a large quantity of fruit. But if what is known as the starving process is to be followed—i.e., plant the trees and take no further trouble about them—then by all means avoid every kind of Paradise stock, as trees upon the Crab, however vigorous, will be none too much so for such a method of treatment. I prefer to buy two-year-old untrimmed trees, and to make my own personal selection, so as to secure the kind of trees which I desire.

Having secured the trees (which should always be obtained from some well-known and established nurseryman) it is of all things most important that they be properly planted. First let the roots be seen to, and all injured ones cut back, and also all long straggling roots; then have a hole made—not deep, but of sufficient space to allow of the roots being spread out their whole length, not cramped into a heap, and then filled in with the earth made as fine as possible, so that it may shake well into the roots; then tread tolerably firmly with the foot, according to the state of the ground, and let the ground when finished be slightly higher round the trees than elsewhere.

If the trees be standards they will need immediate staking, or they will soon be displaced and injured by rough stormy winds. This should be done carefully and well, otherwise much harm may come to the trees by chafing against the stakes, a result which I saw some time ago in the case of a young plantation. If the trees be "half-standard," or two years old, such as I have described, they will not need staking, except in a few cases where the roots are few and feeble, and this not until some time after planting, at least such is my experience and practice.

We come now to a part of the subject upon which I am aware a great diversity of opinion exists, greater perhaps than in any other. I mean that of pruning. In this matter I wish to give my own experience and belief, in no dogmatic way, but with an honest open mind, willing to believe that others may have found some other practice to be preferable. It is my practice with trees such as are to be obtained generally, to cut back severely, the same season as the planting takes place, and I have rarely failed to secure good shoots with which to form the basis of the trees. Often these require nothing more in the way of pruning beyond the thinning of the branches and the removal of shoots that cross each other, but where the growth is weakly I cut back a second time. But when once a tree is properly furnished with an evenly balanced head, the best thing to do is to let it alone, that it may bear fruit, which it never will if the pruning knife is constantly used. In this matter the habits of the different varieties of Apples must be studied. Some will bear more pruning than others, while some apparently will not bear any.

With the approach of spring (or even at the autumn planting) the trees will be greatly benefited by some manure being spread round the stems of the trees, and remaining upon the surface. This will help to exclude the dry penetrating winds, and will also tend to encourage surface rooting, which is much to be desired.

I have thus dealt with the preliminary stages in the cultivation of Apples, as being the all-important time upon which the success or failure of after years to a large extent depends. If the land be intended for orchards, it will be better to defer sowing the seeds for at least two years, and planting the ground with other crops, such as Potatoes or roots, so that the trees may become thoroughly established, when the grass seeds may be sown and afterwards fed off with young stock or sheep, or if cut for hay care should be taken to replenish the soil so that the trees may not suffer.

In the case of trees upon land under constant cultivation much more may be done in the management of the trees where a tree shows signs of running to wood. If upon the Paradise stock it may be lifted and replanted, or if upon the Crab it may be root pruned with very good results, whilst those that appear weakly may be encouraged by stirring the soil and by surface dressing. So far I have said nothing upon the distances at which the trees should be planted. This will vary very much indeed, for while 30 feet by 20 may not be found too much for orchard standards of vigorous

kinds, 18 feet by 12 or 15 will be found ample for many sorts upon the Paradise stock.

It may be expected of me to give a list of sorts that I consider most profitable. I therefore append a list, not as being in any way complete, but rather as types of all classes to which they belong, always remembering that any one kind of Apple will not succeed equally well in all soils and in all districts, and that in making a selection regard should be had to the soil and situation, and to plant those sorts that seem best to succeed in each particular locality.

For kitchen use I should advise the following:—Early Julien, Lord Saffield where it succeeds, Keswick Codlin, Yorkshire Beauty or Red Hawthornden, Stirling Castle, Duchess of Oldenburg, Lord Grosvenor, Ecklinville, Jolly Beggar, Lord Derby, Grenadier, Small's Admirable, Warner's King, New Hawthornden, Stone's Apple, Tower of Glamis, Bismarck, Lane's Prince Albert, Bramley's Seedling, and Wellington where it succeeds.

For dessert or table use I would suggest the following—viz., Red Juneating, Mr. Gladstone, Yellow Ingestrie, Devonshire Quarrenden, on soil that suits it; Lady Sudeley, Worcester Pearmain, which has more money in it than any table Apple I have yet seen; Duchess's Favourite, King of the Pippins (if in orchard Blenheim Orange), and Cox's Orange Pippin. The last named will, I think, be generally found to answer best upon the Paradise stock.

I purposely pass over the cost of planting, which may be easily ascertained by reference to catalogues of fruit trees, and by a little calculation. I would like, in closing, to emphasise a few points. First, do not plant a few trees of a large number of sorts, but first ascertain what is best for each particular locality, and then plant a large number of those sorts. Give preference to those which can be gathered from the trees and sent direct to market. If possible plant a whole field, or at least several acres when planting. Avoid all patchwork business. Do not force growth too freely when young, but as the trees advance in age, and heavy crops have checked their vigour, let them be well fed and cared for, which expense and trouble they will well repay. Remember that "whatever is worth doing at all is worth doing well," but that it is impossible to do anything well without attention.

HARDY FLOWER NOTES.

FROST is still holding off, but by the stormy Solway another enemy seeks to work havoc among our late flowers. Boreas seems to take pleasure in levelling to the ground our tall plants, and even our Crocuses and Colchicums are not safe from his rude breath. The stoutest stakes well driven into the ground too often prove powerless to uphold tall Asters and Chrysanthemums. In this light soil the stakes are shaken until they become loose, and the plant they are intended to support finds its stake affords but little aid. A few days' absence from home allowed the enemy full scope, and on my return I found some of my flowers in all manner of positions—some bent gracefully, others were at an angle which would have made the leaning tower of Pisa tremble for its laurels, while others (too proud to stoop or too weak to contend) grovelled in what should have been the dust, but was only damp earth. Fortunately some of these flowers seem to have a toughness of stem quite valuable, and a little work soon set them to rights. But after all, what is there to write of now? The dwarfier plants have mostly ceased to produce their flowers, *Hypericum reptans* being perhaps the best among the few alpine in flower. There is a charm about the bright green carpet of leaves formed by this little plant which endears it to me; but to see it bearing profusely its pretty yellow flowers about an inch across—yellow above and buff beneath—makes it doubly dear. Another long bloomer is *Potentilla nepalensis*, a plant which sends out long trailing stems, which produce bright cherry red flowers in great numbers for some months.

Bulbous plants still help to give variety to the garden. *Lilium auratum* is still in flower, but from its magnificent flowers it is a long stretch to look to the Crocuses and Colchicums. *Crocus speciosus* is now past, but its fine dark variety *C. s. transylvanicus* is still in flower, while *C. nudiflorus* and *C. zonatus* are blooming away. *C. Boryi* is going to disappoint me this year, but some others are coming rapidly forward. The double white Colchicum is very fine at present, and another pale but little species, *C. Bertoloni*, is in bloom with a few others. Some bulbs of *Hyacinthus azureus* (Muscari) obtained last month have chosen to flower just now instead of waiting until their normal time, January or February. Newly purchased bulbs of many kinds which have been lifted and dried frequently act in this erratic manner. This Muscari, or Hyacinth, for it is known by both names, is a very pretty little flower, of a colour which is well described by the specific name *azureus*. It is a little disappointing, however, to

find it anticipating its usual period of flowering, as this will likely mean its failing us in spring.

The *Tradescantias* are old-fashioned plants which are apparently again coming somewhat into favour. They are beginning to re-appear in good collections. I have grown several varieties, and seen some others, and had I to make a selection of four I would choose *T. virginica* (blue), *T. v. alba*, *T. congesta* (light blue), and one which I have under the name of *T. atro-rubens*, the brightest of all. They are almost continuous bloomers, and this damp season appears to have suited them well. Some of the perennial Sunflowers are still in full bloom, and looking over them I do not see any to equal at this season *Helianthus multiflorus maximus*. I much prefer it to the double varieties, not even excepting *Soleil d'Or*, the subject of so many criticisms. From all I have seen of it I feel bound to say that generally speaking it is distinct from the ordinary double *Helianthus multiflorus*, but that its value varies in different gardens. I have seen it very good, but last week I saw it in a Lanarkshire garden, and then it was very poor indeed, and not equal to the ordinary form. *Chrysanthemum uliginosum* is now in full flower, and despite its strong growing propensities is of great value as a succession to the other hardy species. A gardener of my acquaintance was in the habit of cutting these down when about 18 inches high, and this had the effect of reducing their height, although it also retarded the bloom. It is a little surprising in going through gardens to see so many worthless perennial Asters. I have seen but few I should care to add to my collection with the exception of a tall, large-flowered one named Robert Parker and one named *Galatella linifolia*, which is very bright, and is covered with flowers, which are, however, not of good form. I expect this is synonymous with *Aster linariæ-folius*. I have a considerable number of these Asters, some of which can hardly be considered among the *élite* of hardy flowers, but are useful for cutting, and help to give interest to the garden in dreary days. Too soon, however, we shall have to say with Bryant:—

“ on the hill the Golden Rod, and the Aster in the wood,
And the yellow Sunflower by the brook in autumn beauty stood,
Till fell the frost from the clear cold heaven as falls the plague on
men,
And the brightness of their smile was gone from uplands, glade, and
glen.”

—S. ARNOTT.

STRAY NOTES.

THE article by “I. M. H.” on Violets in the Journal of September 18th was an excellent one. He gave the solution to a problem in culture which seems perplexing to a novice:—viz., You must cut off all runners as soon as they form in summer and autumn, and yet your fresh plants in the spring must be young ones, and not the actual old crowns. The answer to this puzzle is that a few runners here and there are very short, and form plants that do not reach much beyond the margins of the clumps, and also some early cut-off runners, I think, form plants close in to the old stools. One naturally leaves these in cutting off the thin string-like runners round the plants, and in the following spring, when breaking up the stools for fresh planting, it is not difficult to choose these instead of the worn out centres. Cutting off the runners is very important; it is by constant care in this respect that great strong clumps are formed which bloom in extraordinary profusion nearly round the year. It is a troublesome job, especially late in the season, when leaves and flower buds, neither of which should be injured, are mingled with the runners all round the plants; but a neglect of it is one of the first causes of failure. A second, and more important fault, is the adding of manure in any shape; the ordinary groom and gardener thinks “a dressing of muck” will do good to anything, but it will ruin Violets unless you want fine leaves, and them only. I was rude enough the other day, in sending a large bunch of Violets by post to a friend, to say that I had not enclosed any leaves, as his own plants, I knew, could furnish them. And a third source of failure is the delaying till too late in the spring to make the fresh plantation; it should be done early in April as soon as the blooms are practically over and the new leaves begin to grow; and the plants should not be tucked in any odd place, but carefully planted in rows in a good open part of the garden. We very seldom block up the lights in the winter; they are altogether off if it is not actually freezing, or altogether on if it is. We aim at as much air as possible compatible with the warding off of frost. We have an Ivy screen close to the Violet frames, and use these leaves alone for Violets in the winter.

I think “T. M. H.” is right in keeping to the two sorts, Marie Louise and Comte de Brazza, and I have four times as many of the

former as I have of the latter, which are never so fine except in the leaf, and are of no use except in the spring. I see a Violet is advertised by a large firm which is “in every way to supersede” Marie Louise; but “as at present advised” it is the best Violet, and I for one do not want anything but the best. I picked a good bunch from my fresh plants about the middle of July. I made no note of the exact date, but it was before we had done Rose-showing. We have been picking ever since, and hope to do so till the beginning of next April. It is a grand large flower, and will take a lot of beating. The old Neapolitan Mr. Beachey recommends is a charming colour, but a very poor flower, and a great many are required to form a bunch. We do not want so many sorts of Violets, or Apples, or anything to the hindrance of the multiplication of the best.

Roses? Well, if we are exhibitors in the large classes we must have many sorts. The National Rose Society is of considerable service in pointing to the best, and in protection against duplicates; but even as it is, the mediocre varieties, which are too good to discard, and yet ought not to take up the room of newer and better sorts, are becoming rather a nuisance.

I see in the Journal that the Americans are starting a society to protect, as by patent, the raisers of novelties in horticulture—an excellent idea, especially if it will not only protect the raisers against the public, but also the public against the raisers, by insisting on everything patented being distinct and of merit. Is not that so, fellow students, of the merits of “Brown’s Bouncing Broccoli” and “Price’s Paragon Pea?”

How useful is an ever-ready supply of liquid manure! By putting solid manure into the soil you lose all control over it, whereas with the liquid you have your hand on the tap so to speak, and can put on the spurt when it is required. A neighbour’s Peach tree had no bloom to speak of, and no fruit at all; the soil was rich, and the shoots were thick, strong, and gross. My only Peach tree on a little bit of west wall is in poor soil; its shoots were small, thin, twiggy, and hard, but it had a fair amount of bloom, and set five dozen of fruit. They would have been very small, and perhaps a good many would have fallen off, but, commencing in July, we gave it two or three thorough drenchings of liquid manure, and had as fine a lot of Peaches as I could wish. It is the same with Tomatoes. I wish I had sold some of mine (I see inferior samples in the shop windows labelled at the same price per lb. as legs of mutton), or at least weighed all I have gathered out of doors. As I have not done so I will not estimate, for that is fallacious. I have at last found the disease on one plant, which I have carried away and carefully burnt. It is strange we have not had it before, if it is actually the same as the Potato disease, for that was upon us badly at an early period. I am trying to persuade the labourers about here that the best possible way to assist the Potato-disease is to do as they do, and always have done—viz., leave all tubers touched with it scattered about on the surface of the ground to rot gradually; but they do not see it, and as I cannot promise them they will have no disease if they do otherwise, they do not think much of my advice.

I have been reading somewhere an account of the fine gardens at Shrublands in Suffolk, as they are now, converted from the most rigid adherence to the bedding out system to a more natural and less artificial state of things. Tea Roses are extensively grown without winter protection, and the gardener, somewhat naturally, says that they are hardy. He is not alone in this statement. A professional Rose grower of note affirms the same in his catalogue, and the meaning of it is that his grounds and those at Shrublands are each on the top of a hill. If the gardener at Shrublands had to grow his Teas in the meadows below, by the river, as I have, he would, I think, alter his opinion. The difference is astonishing, and more than one would imagine, considering it is a matter of at most not more than 3° or 4° of temperature. The top of the hill, if you can, for Tea Roses, Apples, and everything that is likely to be injured by frost, but I do not think they thoroughly understood this in old times. We read of the sheltered valleys as being fruitful and flowery, and exposure was dreaded for half-hardy things, but we know now that low-lying valleys are dangerous, not because exposure to winds is necessarily desirable, but because frost is strongest and most hurtful in low localities, especially by the side of rivers, where there is much evaporation.

An article in last week’s Journal dealt with fish culture. It is true that this is much neglected, and perhaps also true, as some say, that more food per annum can be raised from an acre of water than from the same amount of land, but what I think is also overlooked is plant aquiculture. We ought to get more flowers, and more edible or useful vegetable produce from our water. Will not

some nurserymen make a more pronounced specialty of hardy aquatics? There are many amateurs who have more or less space occupied by ornamental water, but few who have any ideas beyond Water Lilies to grow in it. And what else is there for them to grow except, perhaps, Aponogeton? There are very few things, I fancy, of actual merit in the lists of hardy aquatics as seen in catalogues. We want something better than Butomus, Caltha, Sagittaria, or Typha, not that these things are not pretty or elegant, but that they are simply wild British plants. Have the waters of temperate climes in other parts of the world been really and thoroughly investigated for pretty flowers or useful or edible plants? For the latter purpose it would, I think, be hard to beat the common Watercress, but now that people are actually making bogs in their gardens for Irises, Orchids, and Osmundas, it seems a pity that true water plants, if there are any more good ones to be brought into notice, should not occupy more attention.

I suppose that, in an unusually warm and favourable autumn like the present one, the fly of the Carrot maggot manages to work in two generations in the year. My Carrots had rather a bad attack about midsummer, and I thought the crop was spoiled; but it seemed to pass away, the plants grew luxuriantly, and latterly only the worst spots here and there looked rather thin. On taking them up now (October 10th) every single root is infested, though the tops are still flourishing; the depredations have evidently only been commenced quite recently, and, I take it, these maggots are bred from eggs laid by the flies hatched two or three months ago. We ought to have worried those flies then if I had known how to do it; and the moral here seems to be lift your Carrots sooner if you have had the maggot in the early summer. I expect the Celery fly has profited in a similar manner by the fine weather of September. I saw its blisters on dock leaves in the roadside hedges early in June, and knew we were in for it before it appeared on the Celery. We ousted them out of that with soot, but just lately there has suddenly been another severe irruption on my plants. This is, no doubt, a second generation bred from flies which escaped on the plants or hatched in the hedges. So a fine early autumn seems to have its drawbacks as well as its advantages.—
W. R. RAILLEM.



THE ROSE SEASON OF 1890.

It is related of Sir Walter Raleigh that when he was writing in prison his "History of England" a street row happened beneath his window which he himself saw; two of his friends came in to see him, and gave him an account of the transaction, but so different was their narration that he threw down his pen in despair, and said, "How impossible it is for me to give a correct account of things I have not seen when I cannot get a true account of that which has occurred under my own eyes." Some such despairing thoughts come across my own mind when I come to jot down my reminiscences of the past Rose season. I wished to supplement my own experiences with those of other Rose growing friends, amateur and professional, and wrote to many; but oh! the conflict of opinion and the diversity of experience. The points I was most anxious to obtain information about were general character of the bloom, mildew, orange fungus, and aphids; and it was quite clear from the replies I received that no general description would suit all and every case.

My estimate of the season has been formed from a tolerably wide experience. I have as judge visited many shows, and in going about during the season have also seen many gardens, both of exhibitors and non-exhibitors. I have endeavoured to regard it from the exhibitor's point of view, and also from that of the simple unambitious lover of the flower, who likes to grow flowers as good as those he sees on the exhibition table, but has no thought of "putting on the gloves" and entering into the fray. Every year gives fresh proof their number is increasing, and that their zeal is much increased by the magnificent proofs of successful culture they see at the Rose shows.

I must again record, as far as exhibitors are concerned, a disappointing season. In May everything promised well. This month, as well as the early part of June, was magnificent, growth was rapid, and except in some places frosts were absent; but then came a long spell of cold and wet weather. The early part of July was miserable in the extreme. Shows were held under the most depressing conditions. That of the National at the Crystal Palace was in striking contrast to that of last year, when a suffocating atmosphere destroyed everything. Happy was the society which secured a fine day, for on the first fourteen days we had in East Kent but one day without rain. The effect of this was very manifest, especially amongst the Teas, and it was not until later in the season that they came out in their full beauty, being much finer at

Birmingham than they were at the Crystal Palace for the same reason—excess of moisture. The smaller specimens fared badly, and very many "fell out" when the exhibition day arrived. This must ever be the case where a grower is dependant on a few plants, for however carefully he may shade there will be damage done by excessive wet, and hence we heard on all sides from the smaller growers of plants that they were out of the running altogether.

And yet with all these drawbacks it was a grand year for Hybrid Perpetuals, especially for the high coloured sorts. At every show there were magnificent specimens, which showed not only that the cool weather suited them, but that their cultivation was better known than it used to be, and I honestly think that if we could resuscitate the stands of bygone days we should be fain to confess that we had advanced. This has been most notably the case with Teas, and in a favourable season the immense strides made in this lovely class would be very clearly manifest.

As I have already said, there seems to have been a very unequal distribution of Rose plagues. One large and very successful grower tells me that he had to put on six extra men, who for three weeks did nothing but wash the trees; while another tells me he had no green fly, but was greatly troubled with maggot. In my own garden I never saw an aphid the whole season, and my plants never suffered so little from mildew. I fancy that the cooler weather checked it, and that its most productive cause is the alternation of heat and cold which we experience so often in the latter part of June and beginning of July. Very often, too, after the flowering season is over mildew sets in very severely, but with me it has not done so. Some of our Hop growers have a notion that when a garden once suffers severely from mould it never gets out of it, and I have seen acres in my own parish grubbed because of this persistent tendency, although in the very same field they do not suffer. I know, for instance, one Hop garden; there was a corner of it, about an acre, where year after year it was a failure from mould, and yet 3 or 4 acres of the same garden grew very fine Hops. Whether there was anything peculiar in the soil I know not, but Hop growers believe that the mould is in the ground, and attacks the plant from below. I find in many places the same conditions as in my own garden—an absence of aphides and mildew.

Those who regarded their Roses from a non-exhibition point of view had an immense enjoyment in them this year. Towards the close of July flowers came out in large numbers and of excellent quality; indeed finer flowers were gathered then than perhaps in the earlier portion of the season. The absence of hot glaring sun kept many of them in flower a long time, just as it helped on wonderfully the staying powers of the cut blooms in the exhibition boxes; and then, what a glorious autumnal bloom we have had! Day after day during the lovely September weather we were favoured with grand blooms of such flowers as Marie Susanne Radocanachi, Ulrich Brunner, Gloire de Margottin, Violette Bowyer, &c., while Teas have been a perfect garland of flowers. Marie Van Houtte, Cleopatra, Ernest Metz, Souvenir d'Elise Vardon, Mrs. James Wilson, and Rubens have all been as fine as I have had them in the height of the season; but it has taken away the reproach from the H.P. of not giving us autumnal blooms, and even now (October 4th) there are numbers of buds which, with fine weather, we may hope for many flowers yet.

In one point of view the season has been a noticeable one—viz., in the production of new Roses. It is somewhat remarkable, more especially as they have been home-raised flowers, when it is recollected that the National, since its establishment in 1876, has previous to this year awarded only four gold medals, and that two of these have been for sports, and that this year it has awarded three gold medals. It may well be regarded as an "*annus mirabilis*." I need not say much with regard to these, as your correspondent, R. W. Raillem, has sweetly discoursed on them. I quite agree with him in thinking that Margaret Dickson will be the most popular of the three. Salamander is a form and colour which is always popular, but we have several Roses approaching it in both respects. Mrs. Paul is a grand addition to the Bourbons; but somehow the Bourbons are not in so much favour as the Hybrid Perpetuals; but Margaret Dickson, with its fine broad stout petals and its magnificent foliage, is sure as a very white Rose to be very widely grown, and will be largely exhibited when it comes into general cultivation, and its thick almost leathery foliage promises an immunity from mildew. There are some others which have laid the foundation of a good name, such as Miss Jeanne Dickson, Mr. James Brownlow, Cleopatra, Ernest Metz, and L'Idéale.

The National Rose Society has shown signs of increased vigour. Its exhibitions have been most successful; that at the Crystal Palace quite up to the average, and the provincial one at Birmingham probably the best the Society has ever held, while it has made a new departure in holding one for Tea and Noisette Roses at the Drill Hall on June 24th. This was due to a suggestion by Mr. T. W. Girdlestone, and although the Drill Hall (Baron Schröder's dustbin) was as unsuitable a place as could be found for these lovely flowers, an excellent Show was the result, the only regret being that so few persons came to see them. It was felt by all who were present that a most successful addition to the Society's operations had been made.

Probably the two most successful exhibitors have been Mr. E. B. Lindsell and the Rev. F. R. Burnside, the former the winner of the challenge trophy and a long array of prizes; the latter certainly the Tea Rose champion, having won the Tea challenge trophy, Mr. Boscawen's memorial cup, four silver medals, twenty-seven first, nine second, and two third prizes for Teas only—a most wonderful and

unprecedented record, which would have been impossible a few years ago, and which even now could only be made by one who lives in such a paradise of dwarf Teas as Mr. Burnside does.

It would be ungracious while writing on the past Rose season to omit to mention the loss the Rose world has sustained by the death of Mr. Henry Bennett of Shepperton, to whom we owe so many beautiful and valuable flowers. Heinrich Schultheis, Her Majesty, Mrs. John Laing, Princess of Wales, Grace Darling, Viscountess Folkestone, and Cleopatra testify to the zeal and intelligence with which he carried out his work. While doubting the value of his first introductions (and not one of them is in cultivation now I believe) I at the same time stated that I believed he was on the right track, and that we might expect much from his work. In this assuredly we have not been disappointed, and we can only regret that we are not to see any more fruit of his labours. As a raiser of new Roses he will ever be gratefully remembered by all rosarians.

Such are my views of the past, and now we are busy preparing for the future. Wood has so well ripened that many are even now talking of planting. Let us hope no disappointments await us in the future, but that all may be *couleur de Rose*.—D., Deal.

NEW ROSES.

I CAN supplement Mr. W. R. Raillem's interesting note on new Roses, as far as concerns Augustine Guinoisseau. I bought some very small but healthy plants from Mr. H. Bennett in the spring this year; they have grown well and flowered frequently, in fact wonderfully, considering what tiny plants they were in May. The flower is a fairly large one and richly scented, but I do not think it resembles much its parent La France, and it certainly will never be so good a Rose as La France. For all that I think it is worth having in a collection, as it seems to me a free grower, and may develop into a higher class Rose when well established.

Mr. Raillem's remarks about Lady Castlereagh I also endorse. It is a poor Rose, and it has not a single good characteristic to recommend it. I am glad to see my friend Mr. Benjamin Cant properly describes it as "form indifferent." It would be misleading to give it good name.—CHARLES J. GRAHAME, *Croydon*.

MR. RAILLEM's remarks on Roses are always welcome and valuable. I venture to endorse most heartily what he says of Lady Castlereagh, in which Rose I fail to see a redeeming point. I was much struck with a midland grower's experience of Sir R. Hill reverting to Chas. Lefebvre. This year one of several plants of Sir R. Hill budded by myself has appeared in wood and flower to be exactly Chas. Lefebvre. I naturally concluded that I had by mistake inserted a bud of Chas. Lefebvre, but now I am inclined to believe that it is a case of Sir R. Hill reverting to the character of its parent. May I hope for any remarks of rosarians on this Rose, which, I must confess, with me is not a good grower, and singularly sensitive.—HENRY B. BIRON, *Lympe Vicarage*.

LOCAL ROSE EXHIBITIONS AND THE AMATEUR CLASS.

TAKING a review of the past Rose exhibiting season, I think the time has arrived when there should be something more definite as to the word amateur, as at present there seems to be no limit. There are gentlemen who grow and cultivate two or three acres of Roses; they compete in the amateur and open class against nurserymen at the same time and beat both, and yet they say they are amateurs. Again, there are growers who grow and cultivate not more than a thousand plants. Undoubtedly they are amateurs (according to the definition of Walker and Webster) because they cultivate their Roses without aid, but the large growers do not. But mark the difference of the two in a competition point of view; can anyone say that it is fair for these two amateurs to compete in the same class? I say decidedly, No, and maintain that anyone who cultivates more than half an acre of Roses ought not, especially those who cultivate two or three acres. If labour is employed in the cultivation of Roses, does not reason say, as a matter of necessity, it must be professional labour, or, in other words, one who has made it his business to practically understand Rose culture, and, as a matter of fact, partly or wholly lives by it? Such being the case, the word amateur is certainly out of the question if the exhibitor grows so large a quantity that he cannot cultivate them without assistance. Again, I ask, where lies his claim to exhibit as an amateur? My opinion is that there ought to be a class especially for large growers, but in the event of there not being sufficient funds to provide for an additional class, they ought to be classed with the nurserymen, with whom they are quite able to hold their own, according to their previous performances. I think it would be well for committees of local Rose exhibitions before they frame their schedules for the ensuing year to ponder over these observations, hoping they will see the injustice of the past, so that they may be enabled in future to frame them on a more equitable basis.—AN EXHIBITOR.

GROWING AND SELLING FRUIT.

(Continued from page 310.)

NUTS.

A GREAT deal of money is often made from this fruit by the Kent growers, and it has an advantage over most other things, as it will grow best on warm dry banks on any soil containing limestone,

and will also grow in places that are too stony for other fruits to thrive to perfection. It is not advisable to plant too many of these north of London, unless the situation is warm and thoroughly exposed to the sun. In Kent they are often grown as an under crop among standard Apples, but further north they do not ripen in shady positions.

PLANTING.—The plants may be raised from cuttings, but are not so easily managed as Currants or Gooseberries, and take longer to reach a good size ready for planting out; it is therefore best to purchase them, as they are sold very cheaply in Kent. When planted in their permanent quarters they should be not less than 12 feet apart each way, and as they are five or six years before they bear much fruit Gooseberries or Currants are often planted between them, or the ground may be cropped with other things. Planting should be done between October and March, as for other fruits. Cost of planting an acre with Nuts only would be about £5.

CULTIVATION.—This consists mainly in keeping the ground clear of weeds, and digging it over with forks in the winter. Nuts do not, as a rule, require any manure, but it will do them no harm if applied to other crops growing among them. A plantation when once established will last for fifty years with proper attention.

PRUNING.—They are best grown on a clear stem not less than 1 foot in height, and trained with about seven main branches springing out evenly all round, so as to form a low spreading tree shaped like a shallow basin, not more than 4½ to 5 feet in height, the centre of the tree being kept open to give abundance of air to the crop. Every winter all strong shoots not required for extending the size of the tree are cut back closely to the main branches, leaving the small twigs, which are not more than 4 inches in length, and about the thickness of straws; these bear small red flowers in spring, from which the nuts come in due time. A few of the catkins or male flowers should always be left where this is possible, or the flowers won't set, and no crop will follow. Branches of the wild Hazel with catkins in flower may be hung among the trees if they are scarce. They are pruned in Kent at from 4s. to 12s. per 100, according to size. Summer pruning is also of great service to them. About July all strong shoots should be taken out of the centre of the trees, and those springing up from the roots also. They are best twisted off with the aid of a small wooden mallet instead of cutting them, as they do not shoot out again so soon from the same place. Boys do this summer pruning in Kent at 2s. 6d. per 100 trees. Some fruit growers leave these strong central shoots until the autumn, when they can be used for making the sieves and half sieves for marketing the fruit, but it is better to remove them in the summer to prevent weakening of the other parts of the tree.

GATHERING AND MARKETING.—This crop is often gathered green, as soon as the nuts fill the shell, and they are then sent to market at once, but the bulk of the crop is left until September and October, and then come off the trees easily with a good shaking. They are then picked up by women and boys, and spread out in a dry room on a boarded floor about 9 inches thick, and are turned over occasionally to prevent moulding. They will keep like this for a length of time, but are generally all sent to market by the middle of December. Before sending them away they are looked over, and all small ones and black ones picked out. They are then sent off to market as required packed in "sieves" just as they grow with the husk on, and finished off at top as recommended for Apples. They fetch from 6d. to 1s. per lb. according to the market. An acre of trees in full bearing should yield in the best seasons from 15 cwt. to 1 ton, worth at an average price from £50 to £70, but it is only in very good seasons that a crop like this can be grown. Sometimes the frost in spring will destroy nearly all the crop by killing the flowers or causing the young Nuts to fall. Cost of gathering when ripe will be 20s. to 30s. per acre.

ENEMIES.—Squirrels and rats are the worst, and the only remedy is trapping or shooting them.

VARIETIES.—The true Kent Cob Nut is the best for general culture, being larger and more productive than the Filbert.

PLUMS.

If anything prevents Apples being grown as a "top crop," Plums will be the most profitable to plant in their place if the situation is not too liable to suffer from late spring frosts. Plums are rather uncertain croppers for this reason, but give a good return when a crop is secured.

PLANTING.—They may be planted as standard trees at 20 feet apart each way, and either Gooseberries or Currants grown between them; or if a mixture of all kinds of fruit is to be grown with vegetables, as explained further on, it will be best to plant them 30 feet apart each way, as for standard Apples; or if the situa-

tion is cold and exposed, bush trees may be grown instead of standards, and should be planted about 12 feet apart in the rows, and 16 feet between the rows, and will then allow a row of bush fruits being grown between them, or vegetables if preferred. They should be planted in the autumn as for other fruit. Cost of plants and planting per acre will be about the same as for Apples if planted at the same distances.

PRUNING is done on the same system as for Apples.

GATHERING AND MARKETING.—If the fruit has to be sent a long distance it must be gathered as soon as well coloured and before it gets soft, or it will not travel well, and consequently the returns will be small. They are generally sent from Kent in "half sieves," which are made to an even weight, and instead of putting straw or grass on the top nettles are generally used, as they are considered to preserve the bloom better. If only a small quantity is grown they may be packed for dessert fruit in shallow boxes, just deep enough to hold one layer, and are then sold at fancy prices by the box in the shops; but for ordinary fruit the price varies from 1s. 6d. to 3s. 6d. per stone, according to quality and scarcity of the crop. As much as 3 or 4 tons per acre might be grown in a good season, but half that quantity would be an average crop.

CULTIVATION.—Same as recommended for Apples.

VARIETIES.—Only the Victoria can be recommended for the small grower. Other varieties are more uncertain in cropping.

INSECT ENEMIES.—The "aphis" or "green fly" or "blight" is very troublesome in some seasons, and besides causing the fruit to be small through crippling the foliage it makes it very dirty, and also weakens the tree for another season's crop. The best remedy is to syringe the trees with softsoap water, 2 ozs. to the gallon, early in the season before much mischief is done.

DAMSONS.

These may be planted round the edge of the plantation, whether Apples or Plums are grown, as the "Cluster Damson," which is the only one recommended for general planting, is a small growing variety, and not likely to interfere with the other trees. In some parts of the country they will pay well for growing, but in some parts of Kent have already been planted too extensively to get a good market in London. They should be planted as standards about 16 feet apart, and require the same treatment as Plums in every other respect. The "Cluster" variety, called also the "Farleigh Prolific" and "Crittenden," is generally on its own roots. The young suckers that spring up should therefore be taken care of, and will eventually grow into bearing trees. This is the heaviest cropping and hardest Damson known, and although not so good in quality as the other varieties it pays better for growing. The price obtainable varies very much according to the season, &c., but generally speaking is from 3s. to 10s. per half sieve (about 4 gallons). Price paid for gathering in Kent is about 3d. per half sieve. Price of trees and planting is about same as for Apples if planted same distances, but, as mentioned above, Damsons are generally planted about 16 feet apart. To plant an acre at that distance will cost almost double as much as Apples at 30 feet.

CULTIVATION, GATHERING, AND MARKETING.—Same as for Plums.

CHERRIES.

Except in a few places in Kent where plenty are grown in the immediate neighbourhood, this fruit is not recommended as a source of profit, as, unless grown in large quantities, it is impossible to preserve them from birds. They should only be planted where chalk or limestone abounds in the soil, as although they grow quite as freely in sandy and other soils, they fail to stone, and the fruit drops off in a small state. When they do succeed, enormous profits are sometimes made from them, £40 per acre clear of all expenses being no uncommon price. They are always grown as standards, planted about 30 feet apart each way, and the ground pastured underneath. It is, therefore, not a fruit adapted for the small grower and cottager, if he wants to grow vegetables and other things, as the Cherry objects to the soil being cultivated where it is grown. Most of the fruit-eating birds like Cherries, but starlings are the greatest plague in the Midland districts.

MISCELLANEOUS.

PEARS are not recommended as a profitable fruit to grow. As a rule they are too uncertain in their crop to pay the small grower a good return, except in parts of Worcestershire, &c., where the soil is peculiarly adapted for them. In such places they may be grown as standard trees instead of Apples, and require similar treatment.

RHUBARB may be grown between the standard trees, and will

pay well in some districts; but as a rule it is not advisable for small fruit growers to cultivate this, and not being a fruit, although used as such, its cultivation is not treated of here.

TOMATOES.—These pay well in warm districts in a good hot season, but as they cannot be raised without the aid of glass they are of no use to the majority of small cultivators; and although really a fruit, yet as they are used as a vegetable, their treatment would be out of place here.

ARRANGEMENT OF A PLANTATION FOR SMALL GROWERS.

As regards fruit culture the old proverb is quite true which says, "Don't put all your eggs in one basket." It is not a good plan to depend on one kind of fruit altogether for a crop, because in some seasons Apples, for instance, may fail to give any crop through late frosts killing the flowers, while Currants or Gooseberries may escape and give a good crop, and so on with other kinds. A mixed plantation is therefore best for the small fruit grower, as he cannot afford to wait a year or two without any returns; but for those who grow several acres it is best to keep each kind of fruit by itself as much as possible for convenience in gathering and cultivation. Thus half the plantation may be planted with Apples and Gooseberries, the other half with Apples and Currants, and so on according to the size; but the cottager and those cultivating less than one acre will be safer if they grow on the following plan, and can also grow vegetables and flowers for market or home supply at the same time.

No.1	†	.	A.	.	A.	.	†	.	A.	.	A.	.	†
No.2	.	.	.	.	.	.	.	.	.	.	.	.	.
No.3	.	.	.	.	.	.	.	.	.	.	.	.	.
No.4	.	.	.	.	.	.	.	.	.	.	.	.	.
No.5	.	.	.	.	.	.	.	.	.	.	.	.	.
No.6	.	.	.	.	.	.	.	.	.	.	.	.	.
No.7	.	.	.	†	.	.	.	.	.	†	.	.	.

The crosses represent standard Apples or Plum trees, or whatever is grown as a "top crop," at 30 feet apart; the dots Gooseberry or Currant bushes 5 feet apart; or rows 3, 4, 5 can be omitted, which will give 20 feet down the centre of each row for growing vegetables, corn, or Strawberries if any of these are required. If Nuts are likely to succeed they may be planted in the same row as the standard trees, as at A in row No. 1, leaving out the bushes close to A., planting the Nuts 9 feet on each side of the standard trees, and cutting out the intervening bushes when they get in the way of the Nut trees; or row No. 4 may be Raspberries, and the others Currants and Gooseberries with standard Apples, and the plan may be varied in many ways to suit individual tastes and requirements. If bush fruit are planted a row of Potatoes or Cabbage may be grown between each row of bushes for the first two years after planting, which will bring in a good sum of money if well attended to, but will cause extra expense in keeping the ground clean, as hand hoes will have to be used instead of horse hoes. If Strawberries are grown in place of rows 3, 4, and 5 one-fourth of the ground intended for them should be vegetables or corn each year that will come off early, so as to get the ground ploughed up, and the young Strawberry plants planted out by the end of August, and another piece of Strawberries that is three years old ploughed up ready for a crop of corn or vegetables, thus planting a quarter of the Strawberry ground afresh every year, renewing the old plantation of Strawberries once in three years in this manner, and giving the land a year's change of crop once in four years. Where manure is difficult to obtain, a crop of corn for feeding pigs might be grown for a change if vegetables are not required.

Around London large quantities of Wallflowers, Violets, and Daffodils are grown under and among standard fruit trees, and sometimes prove very remunerative. These might be grown under the standard Apple trees when they get too large for the bush fruit in rows No. 1, 2, 6, and 7; this will be about fifteen or twenty years after planting. Ordinary cottage gardens are too small as a rule to admit of any arrangement like this. Too often there is not sufficient room to grow the necessary summer vegetables and the winter's supply of Potatoes for the cottager's family; but standard Apples may be grown in such cases, and may be planted 30 feet apart each way. The lower branches should be cut off if they droop within 6 feet of the ground; it will then be quite possible to grow the usual vegetables if they are well watered in dry weather during the summer, and in very large gardens rows of Gooseberries or Currants may be planted 10 feet apart, and the trees 5 feet apart in the rows, and the space between may be used for growing vegetables and Strawberries, or if large enough the

whole garden may be arranged as in the above plan, leaving out rows Nos. 3, 4, and 5 for vegetable growing.—W. H. DIVERS.

(To be continued.)

INSECTS OF THE FLOWER GARDEN.

(Continued from page 222.)

THERE is hardly a flower garden, however small, in which during the summer and autumn bugs are not to be found; that is, bugs proper, insects belonging to the order Heteroptera. Some of these are comparatively harmless, others are injurious to an extent, as they suck the juices of plants, and some may be accounted useful because they prey upon smaller insects. Our American friends apply the word "bug" to a variety of species, beetles included, but it belongs of right to the group allied to the familiar plant lice and scale insects, though somewhat different in structure and habit, certainly minor pests compared to those, and if larger in size fewer in numbers generally. These Heteropterous insects are active through all the stages of transformation, and when full-grown have four wings, the upper pair being partly horny, the under pair membranous and very delicate. The head is furnished with a proboscis, which is doubled down when at rest. In the predatory species this is short and strong. Behind the head is what is called a shield, or horny plate. Many of the species run with agility, some of them leap from place to place, and most of the land bugs give forth a disagreeable scent, which makes it undesirable that they should haunt flowers.

It is not needful to describe the aquatic bugs, which are rather numerous, singular sometimes in form, and a few of them possessed of the ability to walk upon the surface of water, snapping up little insects that may chance to settle there or fall in. Very few indeed of our garden bugs have received English names, so one is obliged to speak of them by their scientific designations. One little group, however, have oddly been styled "bishops," or "bishop's mitres," from the shape of the body, and some seasons they are abundant in orchards, especially amongst Cherry trees, to the annoyance of fruit growers. They are probably attracted to flower gardens by the fragrance of certain species. One of these "bishops," that puts in an appearance now and then, is *Asopus luridus*, the body of which is yellow and black, its head and the edges of the thorax dark blue, or bronzy blue. Akin to this is a common autumnal species we may see running over herbaceous plants, or airing itself on the topmost twigs of shrubs. It is named *Verlusia rhombea*, from the curiously widened and flattened abdomen. It is yellowish brown, with a dark brown head, and legs of a paler yellow, having small punctures all over the body. During the hours of sunshine it frequently flies briskly, making a hum nearly as sonorous as that of the humble-bee. A much smaller bug, *Stenocephalus agilis*, is also remarkably active and fond of the sun. This is yellow and brown, with a red spot on each shoulder. Though these insects certainly feed on the juices of plants, we seldom catch them in the act of sucking. Most of the bugs, it also should be noted, emit a secretion which is probably connected with the smell they give forth, and which makes them, I believe, distasteful to birds. One exception is a scarlet species, *Pyrrhocoris apterus*, rather scarce in Britain, but which sometimes occurs during autumn in little companies amongst fallen leaves, this throws off a scent that is mildly aromatic.

Perhaps the best known of the garden bugs is the *Pentatoma*, called *griseus*, the colour grey predominating, though it has some markings of black, yellow, and red. Many readers have doubtless picked these off flowers and leaves, and dropped them speedily on finding they exuded a fluid which left a brown stain upon the fingers. Another *Pentatoma* has been styled the Cabbage bug, from its haunting that vegetable. In this species, *P. rufipes*, the red colour predominates. It may be seen amongst the Cruciferous plants in borders. All the *Pentatomas* are believed to be partly carnivorous; some of them have been noticed in the act of piercing the skins of caterpillars. A funny, very active, but small bug, is that named *Cymus Resedæ*, from its occurrence on beds of *Mignonette*. It is only the fifth of an inch long, yellow, with a red head and shield. It lives probably by making tiny punctures in the stems of the *Mignonette*, and sucking its sap. Those also of the family *Capsidæ* are sometimes numerous. They are very soft-bodied, have long antennæ, and are of various colours, a few dark brown, almost black, and apt to conceal themselves.

My attention has been called this autumn to a familiar pest, allied to the bugs, but in the hemipterous order, and which spares neither fruit, flowers, nor vegetables. No season passes without its doing some amount of mischief. This is commonly known as the cuckoo spit, a singular name. I can hardly suppose it originated in an idea that the cuckoo produced the froth in which the insect envelopes itself, but it is more likely the allusion is to the fact that

this insect is abundant about the time when the cuckoo's cry attracts notice. "Froghopper" is another name given to it both in England and France, and though some have stated that the French fancied this foamy substance was the frog's secretion, I rather think this refers only to the leaping habits of the insect when full grown. Entomologists call it *Aphrophora spumaria*. Checked by the coldness and dryness of part of April, the cuckoo spit was late before it appeared in 1890, and, speaking generally, caused less annoyance than usual, but the cool character of the summer seems to have made it more injurious to some flowers by robbing them of their vital force. A friend reports that it was abundant upon some Roses, upon Dahlias and Chrysanthemums, and he inquires anxiously whether anything can be done to diminish its numbers in the future; for besides the harm that arises from this insect, it is very disagreeable to see our plants dotted over with frothy liquid, and get portions of it on our hands and clothes. Of course this envelope not merely screens the larva or grub from the sun's rays, which, owing to its structure, would otherwise cause its death on a bright day, but it must certainly protect this insect from various enemies, including birds. Of course the "spit" or froth is sap which the insect has pumped into its body, and then throws off again almost unchanged. The curious part of the matter is how the creature manages to fill these globules with air, for they are by this means prevented from drying up speedily. One of them, if examined by a magnifier, may be seen busy at the work of making bubbles or globules, having first filled itself with sap, and as each one comes out it is moved in position by the legs till the insect is sufficiently screened. Syringing or washing the plants clears off this froth, but unless it is effectual enough to bring off the grubs themselves, it does no good, as they can soon coat themselves again. Probably a solution of soap would be a useful application. This would prevent those moistened with it (and which have fallen) from returning to the plants. But the destruction of the females at breeding time is more important. There is little difficulty in shaking these from plants and shrubs, for when full of eggs they are sluggish, and thus easily distinguished from their more agile male companions, which can leap a surprising distance. In the perfect state *A. spumaria* is most abundant during August and September, a dull-looking insect of brownish hue, but should a moderate power be applied to the upper wings the surface is exhibited as a membranous network, covered with a host of circular dots placed in rows. If we could ascertain where the eggs are laid it might be easy to get rid of some of them in the winter, for they evidently remain unhatched from the autumn till April. I suspect they would be found near the earth upon the crown or lower part of the stem, from which afterwards the little grubs work their way up gradually.—ENTOMOLOGIST.

AN OLD MULBERRY TREE.

A FINE specimen of the Black Mulberry (*Morus nigra*) exists at Brotherton Vicarage, Yorkshire, as a standard on the garden lawn behind the house. This aged tree is not only an ornament to the garden and venerable in appearance, but it annually produces abundant crops of delicious juicy fruits. As it appears to be a very general opinion that the Mulberry will not produce eatable fruit so far north as this, perhaps a short account of the tree is question will be interesting to the readers of the *Journal of Horticulture*. That the opinion is entertained that ripe Mulberries fit for dessert are only produced on standards in the more favoured southern counties of England is evident from the following quotations. Mr. Rivers, in his very instructive book, "The Orchard House," on page 166 makes a statement to this effect: "The cultivation of this fruit (the Mulberry) is entirely restricted to the southern counties;" and on page 477 of Thompson's "Gardeners' Assistant" it is said, "In the north of England this tree requires a wall with a warm aspect." There are exceptions to every rule, and, as has been already mentioned, the old Mulberry tree here seems to be an exception to the general experience.

The tree which forms the subject of this note was planted by the Rev. Charles Daubuz, a Frenchman, who left his native country in the year 1686 to avoid the persecution then directed against the adherents of the Reformed religion. He found an asylum in this country, and eventually became vicar of this parish in the year 1697. He died in 1717, so that the tree planted by him must be at present upwards of 173 years of age, computing from the year of his death to 1890. It is still a flourishing tree, and seems far from producing its last fruits. The present season, so adverse to all outdoor fruit generally, has suited it admirably. Never within the writer's memory, extending over a period of the past seventeen years, has this old tree produced such a crop of large juicy berries, with that deep purple-black colour indicative of perfect ripeness. It would be interesting to know whether another similar instance exists in

Yorkshire. The tree mentioned is growing on the magnesian limestone formation, and on somewhat similar soil as that at Milford and Sherburn, which produces the famed Winesour Plums, so much prized for preserving. The lawn on which the tree is planted is elevated and well drained, and the subsoil, as may be concluded, of a very porous nature. The water level, as calculated from the depth of the garden well, is about 54 feet below the surface.

Some of the finest berries, picked off the tree this morning, are herewith sent for the Editor's inspection. It is to be hoped, being fruit that will keep so short a time, that they will arrive in fair condition.—GEO. HASLAM.



THE WEATHER IN THE METROPOLITAN DISTRICT has been generally fine, but the morning and evening fogs have been rather dense, and in the immediate neighbourhood of London they have on several occasions continued nearly the whole day. Slight frosts have been experienced, and on Tuesday morning it was severe enough in several places to kill the Dahlias. Wednesday morning was brighter, but rain fell during the day.

— UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—The quarterly meeting of this Society was held at the Caledonian Hotel on Monday evening last, Mr. G. W. Cummins in the chair. The Society still continues to make steady progress, both financially and numerically. No death has occurred amongst the members during the quarter, and there is but one sick member on the funds. All members are invited to contribute to the convalescent fund, which was opened in July last. The fund is voluntary, and entitles members to a sum not exceeding 30s. for change of air after illness. Letters were read by the Secretary on various subjects, and the usual vote of thanks to the Chairman ended the meeting.

— THE LATE MR. ENOCH HARVEY.—Many were the expressions of regret when it became known that Mr. Enoch Harvey, head of the firm of Harvey, Alsop, Stevens, & Harvey, solicitors, Castle Street, Liverpool, had met with a fatal accident at the Mersey Road Station, on the morning of the 1st inst. Mr. Harvey was proceeding to business in Liverpool, and in crossing the line was caught by an express train and instantly killed. As an amateur Orchid grower Mr. Harvey was most enthusiastic, and in addition possessed a thorough knowledge of botany. Many were the fine plants he from time to time exhibited successfully at the Liverpool shows, even up to the Show held in August last, and his choice collection at Riversdale Road, Aigburth, was always worth a visit. He was Chairman of the Liverpool Horticultural Association for many years, and when the Royal Horticultural Society held their provincial Show at Liverpool in 1886 Mr. Harvey rendered most valuable assistance in many ways; and the twelve and six Orchids and a collection of fifty herbaceous plants contained many choice specimens, and formed a pleasing feature of the Show. His generosity and kindly manner will be sadly missed.

— CARDIFF GARDENERS' MUTUAL IMPROVEMENT SOCIETY.—The above Society opened their session on Monday, October 6th, in the Mission Hall, Castle Street. Mr. J. Clark occupied the chair. Seven new members were elected. Mr. Robert H. Pearson, of the Castle Gardens, then read a paper on "Gardeners and Gardening," which was well discussed. Any information relating to the Society can be obtained from Mr. H. Pettigrew, Hon. Sec., Castle Gardens, Cardiff.

— THE RECENT FRAUDS AT A WORCESTER NURSERY.—We recently reported the case of a dishonest time-keeper named Edward Ray, employed at the Worcester Nurseries of Messrs. Richard Smith and Co., of which firm the Mayor of Worcester, Alderman R. C. S. Carington, is the head. Ray entered fictitious names on his time sheets, from which the wages book was made up, and obtained upwards of £36 at intervals. The trial took place on Monday at the Worcester Quarter Sessions, before Mr. F. A. Bosanquet, the Recorder. Ray pleaded guilty, and it was stated on his behalf that he had been an honest and reliable servant till recently, when he had given way to gambling. He was

sentenced to six months imprisonment, hard labour being dispensed with in consideration of his previous good character.

— CHRYSANTHEMUMS IN LONDON.—The Finsbury Park Show was opened to the public on Saturday last, 11th inst., and the Southwark Park Show commences on Saturday next, 18th inst.; both will be opened daily at 10 A.M. for several weeks.

— MR. E. S. DODWELL.—Miss Dodwell informs us with deep regret that her father is critically ill with a severe attack of bronchitis, and Dr. Guinness orders absolute quiet and repose as the sole condition of his possible recovery.

— GARDENING APPOINTMENTS.—Mr. James Alexander has been appointed to succeed Mr. Alexander Blaikie at Revesby Abbey, Horn-castle. Mr. Charles Street, late foreman at Penrhyn Gardens, Bangor, has succeeded Mr. A. McKellar at Floors, Kelso, N.B.

— GLOXINIAS FIVE MONTHS OLD.—Mr. Allis, Old Warden Park Gardens, Biggleswade, submits a box of Gloxinia blooms cut from plants of which the seed (Messrs. Sutton and Sons' strain) was sown in May this year. They are excellent in size, texture, and colour. He informs us that the plants are vigorous and sturdy. This is a proof of what may be done in a very short time with these valuable plants.

— THE peculiar GLOXINIA figured and described in the Journal recently I have known for a long time. Many years ago when I had charge of the stove plants in Messrs. Veitch & Sons, Chelsea, they sent out two varieties distinct in colour just like that figured, one being marked with intense crimson, and the other blue. They were very peculiar and distinct, but we rarely meet with them in cultivation. The peculiar formation is, however, no beauty compared with the perfect forms and lovely varieties now in cultivation.—ALFRED OUTRAM.

— APPLE YORKSHIRE BEAUTY.—I am surprised to see that Yorkshire Beauty, better known in North Kent as Counsellor Apple, is not more frequently mentioned as a profitable variety for market purposes. During my stay here I have more than once been told by fruit farmers that this is one of their heaviest croppers, and when put on the market in December often realise fair prices, 10s. or 11s. per bushel being given for unsorted fruit. Although an Apple of the second quality, it seems very popular in London, and many old trees have been regrafted with it. Mr. Wright, in his essay on profitable fruit culture, places this variety at the end of his list of culinary Apples.—A. WELLS INGRAM.

— READING GARDENERS' ASSOCIATION.—The opening meeting of the autumn session of this Association was held at the British Workman on Monday evening last, under the presidency of Alfred Palmer, Esq. A large number of members were present. The meeting took the form of an Apple Congress, and some magnificent examples of Apples, of both culinary and dessert varieties, were exhibited. Mr. Turton staged fifty varieties, Mr. Lees and Mr. Dockerill each exhibited thirty varieties, and Mr. Pound showed several dishes of fine fruit. The specimens were clean and handsome, and all the leading varieties in cultivation were represented. Considerable discussion on details of culture took place, and much useful information was disseminated.

— EUCOMIS PUNCTATA.—I often wonder why this most useful plant is not more largely employed for decorative purposes and for greenhouses. We have several plants, among them two in 10-inch pots, each carrying four spikes or scapes from 2 to 3 feet in height, which have done duty in the house since July 15th, and with a little cleaning occasionally will continue to do so for another six weeks. If not pretty, they are attractive and grand for front halls, corridors, &c., where tender plants are soon checked and have to be replenished so often. It is a Cape bulb, of which there are about half a dozen species. They succeed well in a greenhouse temperature. I hope to give them a trial outside next season.—ALFRED SKINNER, *Highecliffe Gardens*.

— SEPTEMBER WEATHER IN NOTTINGHAMSHIRE.—The following summary of meteorological observations at Hodsock Priory, Worksop, Notts, is sent by Mr. J. Mallender:—Mean temperature of month, 58.6°. Maximum on the 8th, 76.2°; minimum on the 1st, 33.3°. Maximum in the sun on the 6th, 124.9°; minimum on the grass on the 1st, 27.0°. Mean temperature of the air at 9 A.M., 59.6°; mean temperature of soil 1 foot deep, 57.2°; fell below 32° on one night on the grass. Total duration of sunshine in month 142 hours, or 38 per cent. of possible duration; two sunless days. Total rainfall, 1.21 inch. Rain fell on

twelve days. Wind, average velocity, 8 miles per hour; velocity exceeded 400 miles on one day, and fell short of 100 miles on seven days. Approximate averages for September:—Mean temperature, 55·8°. Sunshine, 110 hours. Rainfall, 2·51 inches. A very fine and mild month. The mean temperature is higher than in any year since 1880; it is also higher than any month this year, except July, which was a few tenths higher. More sunshine was measured than in any of the previous nine years, except 1885.

— THE "KEW BULLETIN" for October contains an interesting paper on an edible fungus of New Zealand, which we reproduce at page 343. Chapters are also devoted to "Mexican Fibre, or Istle," obtained from species of Agave; "A Forest Plague in Bavaria," due to the attacks of a caterpillar (*Liparis manacha*) in the Pine forests, where it is estimated the loss to the revenue next year will be £40,000. 'Okro Fibre,' the produce of *Hibiscus esculentus*, is dealt with in a short chapter. "Cocoa-nut Butter," with a dissertation on "the Soil and Cultivation of Yoruba-land," concludes the issue for the present month.

— I HAVE read with interest the article by "J. H. E." on STOKESHOLES in the Journal of 9th October, and have no doubt that the advice is on the whole sound. I think, however, I can suggest an improvement in the mode of building the walls. It is well known that bricks are to a certain extent porous, therefore water may pass through the full headers into the stokehole in spite of the inner facing of cement, which may get cracked and broken from various causes. Instead of the ordinary method build two distinct 4½ inch walls with no full headers, and with a space of half an inch between the two walls, which space fill in with cement as the work proceeds. This will keep any amount of water out, and the same system is equally efficient in building underground cisterns. Of course, cement should also be used between the bricks, or cement and mortar, as described by "J. H. E."—R. FALCONER JAMESON.

— MELONS AT THE BAGOT VINEYARD, JERSEY.—A visit to the Bagot Vineyard is always interesting to gardeners. Few men would have the courage to venture on so large a scale with one crop as an experiment as Mr. Bashford does; but courage, combined with sound judgment and perseverance, has made this vineyard famed throughout the world. The cultivation of the Melon to any extent at Bagot is quite a new venture; nevertheless, during last winter two new houses were erected for this purpose. One of them is 300 feet long by 14 feet, the other is 1178 feet long by 14 feet wide. This is, I believe, the longest house yet built for Melon growing. At the time of my visit on September 8th the crop of fruits (9000) had been cleared from these two houses, and winter Tomatoes planted that were just setting fruit; but another house of later-planted ones was in full bearing, and perhaps it is the most extraordinary house of Melons ever seen. It is a lofty span-roofed house 780 feet long by 45 wide, from which the Vines were removed last winter. When the Vines were cut out Peas were sown, and a grand crop was cleared in April. Then the work of preparing the house for the Melons was begun. The Melon crop was not the only object in view, as the house was to be planted with young Vines at the same time as the Melons were planted, and 4 feet only was reserved for them along each side of the house. The work of preparing the plants was commenced on May 3rd by sowing the seed in a vinery where a little fire heat was given; but beyond this on no occasion has any fire heat been used. By the first week in June the plants were strong and the pots full of roots, so the work of planting was begun. The plants were placed out in rows the full length of the house, 3 feet 6 inches apart, and 2 feet 6 inches between the plants in the rows. From this time until the plants were in full bearing, and many of the fruits had been cut, I did not see them; but at the time of my visit the appearance of the house was striking, and would doubtless startle many English gardeners whose experience of Melon-growing is limited to a two-light garden frame or a 12 feet house. All the plants have been grown as single cordons tied to an upright stake, and grown to the height of 6 feet or 7 feet, and stopped when the required number of fruits were set, the plants being allowed to carry from two to six fruits each, according to the sorts and the strength of the plants. Few varieties are grown, as Mr. Bashford does not grow much of anything until he has proved its worth. The bulk of the crop is from one of his own raising, and has fine netted fruit, much like Eastnor Castle. Taking the crop all through, the fruits are above the average size, many of them weighing from 5 lbs. to 7 lbs. each, and the largest have turned the scales at 8½ lbs.—HERBERT PARKER, *Jersey*.

A ROYAL PRESENT OF FRUIT.

AS showing in the best manner available the appreciation of the Fruiterers' Company and of the Executive Committee of the Guildhall Fruit Show of the patronage graciously bestowed on it by the Queen, Sir James Whitehead, Bart., Master of the Company, proposed, with the permission of the exhibitors, that specimens from the different sections of the Show should be sent to Her Majesty. The proposition was at once accepted, and experts were appointed to select the dishes. On those chosen was placed the following printed notification:—

THE Master, Wardens, and Court of Assistants of the Worshipful Company of Fruiterers desire that this exhibit should be reserved for presentation to

Her Majesty the Queen.

Should this wish be complied with the Name and Address of the Grower will be forwarded with the Fruit to Her Majesty.

The exhibitors were delighted to leave the dishes on the tables, and they were collected and arranged in one of the Committee rooms. The collection was subsequently photographed and engraved by an artist (see next page), and he also engraved the largest Apple in the Show, a wonderful Peasgood's Nonesuch grown in an orchard house, and exhibited by Mr. S. Barlow (see page 341). Instructions were given for accurate representation, and it will be conceded that the specimen is a remarkable one. It weighed, we believe, 30 ozs., the variety not being by any means a heavy weighing Apple.

We publish the list, as officially supplied, of the names of the exhibitors and varieties, also the classes and sections from which the dishes were chosen that constituted the Royal collection of home-grown fruit. Mr. H. R. Williams had a copy of Mr. J. Wright's gold medal prize essay on "Profitable Fruit Growing" for cottagers and small holders of land, beautifully bound in morocco and sent with the fruit for Her Majesty's acceptance.

FRUITS SELECTED FROM THE GUILDHALL SHOW FOR PRESENTATION TO HER MAJESTY.

All the varieties named refer to Apples, except where otherwise mentioned.

SOUTH-WESTERN ZONE.

- Class 2, Section 1.—Allen Williams, bootmaker, The Moor, Bodenham, Leominster—Warner's King.
- Class 3, Section 1.—S. French, labourer, Marstow, Hereford—King of the Pippins.
- Class 7, Section 2.—Jno. Hyde, Farmer, Calderwell, Bodenham, Leominster—Ecklinville Seedling.
- Class 8, Section 2.—James Davis, farmer, Bunhill, Bodenham, Leominster—Peasgood's Nonesuch.
- Class 9, Section 2.—W. Helyar, farmer, East Coker, Yeovil—Coker Seedling.
- Class 12, Section 3.—S. T. Wright, gardener to C. Lee Campbell, Esq., Glewston Court, Hereford—Hormead Pearmain.
- Class 14, Section 3.—Thomas Parker, gardener to Mrs. Evans, Moreton Court, Hereford—Tyler's Kernel.
- Class 15, Section 3.—W. Iggulden, gardener to the Earl of Cork, Marston, Frome, Somerset—Pear Doyenné du Comice.

NORTHERN ZONE.

- Class 1, Section 1.—John Wilson, labourer, Hall Lane, Lathom, near Ormskirk—Tower of Glamis.
- Class 2, Section 1.—John Wilson, labourer, Hall Lane, Lathom, near Ormskirk—Dumelow's Seedling.
- Class 3, Section 1.—Thos. J. Pullett, cottager, 82, Russell Street, Loughborough—Cox's Orange Pippin.
- Class 7, Section 2.—John Doncaster, farmer, Halloughton, Southwell, Notts—Bramley's Seedling.
- Class 14, Section 3.—Samuel Barlow, J.P., Stakehill House, Castleton, Manchester—Ribston Pippin.
- Class 15, Section 3.—Jas. Hunter, gardener to the Earl of Durham Lambton Castle, Fencehouses, Durham—Pear Pitmaston Duchess.

SOUTH-EASTERN ZONE.

- Class 2, Section 1.—Fred. Marsh, cottager, The Bow, Nettlestead, Maidstone—Lord Derby.
- Class 3, Section 1.—W. Pulling, labourer, Hill Lop, Tillington, near Petworth, Sussex—Scarlet Nonpareil.
- Class 8, Section 2.—Herbert Manser, tenant farmer, Omer's Farm, North Down, Margate—Lane's Prince Albert.
- Class 9, Section 2.—Richard Webb, farmer, Beenham, near Reading, Berks—Cox's Orange Pippin.
- Class 12, Section 3.—F. Miller, gardener to Jas. J. Friend, Esq., North Down, Margate, Kent—Cornish Aromatic.
- Class 12, Section 3.—W. S. Skinner, farmer, Beresford, Boughton, Monchelsea, Kent—Worcester Pearmain.

Class 12, Section 3.—J. Turner, gardener to R. H. Comer, Esq., Picrepoint, Farnham——Claygate Pearmain.
 Class 12, Section 3.—A. Waterman, gardener to A. H. Brassey, Esq., Preston Hall, Aylesford——Ribston Pippin.
 Class 13, Section 3.—Fred. Bridger, gardener, Penshurst Place, Kent——Emperor Alexander.
 Class 13, Section 3.—Geo. Woodward, gardener to R. Leigh, Esq., J.P., Barham Court, Maidstone——Stone's.
 Class 14, Section 3.—E. H. Caterer, gardener to T. Arnall, Esq., Brookside, Headington Hill, Oxford——Prince Albert.

Class 16, Section 3.—William Allan, gardener to Lord Suffield, Gunton Park, Norwich——Pears Marie Louise d'Uccle and Doyenné du Comice.
 Class 16, Section 3.—R. Smith, gardener to A. Cox, Esq., Presdales, Ware, Herts——Pear Emile d'Héyst.
 Class 4, Section 1.—William Jacob, High Street, Petworth, Sussex——Lady Sudeley.
 Class 4, Section 1.—Henry Norman, bricklayer, 2, Oeklynge Road, Eastbourne, Sussex——Dumelow's Seedling.
 Class 4, Section 1.—W. Waghorn, cottager, Allington, near Maidstone——Stirling Castle.



FIG. 38.—GUILDHALL FRUIT—THE GIFT TO HER MAJESTY.

Class 14, Section 3.—Thomas Turton, gardener to John Hargreaves, Esq., Maiden Erleigh, Reading——Mère de Ménage.
 Class 15, Section 3.—Charles Blick, gardener to Martin R. Smith, Esq., Hayes Common, Hayes, Kent——Pear Magnate.
 Class 15, Section 3.—F. Dunn, gardener to Sir Francis W. Truscott, Oakleigh, East Grinstead, Sussex——Pear Beurré Bachelier.
 Class 15, Section 3.—Charles Ross, gardener to Lieut.-Colonel Eyre, Welford Park, Newbury, Berks——Pear Seckle.
 Class 15, Section 3.—James Sheppard, gardener, Wolverstone Park, Ipswich, Suffolk——Pear Louise Bonne of Jersey.
 Class 15, Section 3.—George Woodward, gardener to R. Leigh, Esq., J.P., Barham Court, Maidstone——Nouveau Poiteau.

NURSERYMEN AND TRADE GROWERS IN THE UNITED KINGDOM.

Class 19, Section 4.—A. J. Thomas, fruit grower, Bargams Hill, Rodmersham, Sittingbourne——Pear Louise Bonne of Jersey.
 Class 19, Section 4.—English Fruit and Rose Company (Cranston's), Limited, nurserymen, Hereford——Duchess of Gloucester.
 Class 19, Section 4.—Jarman & Co., nurserymen, Chard, Somerset——Nelson Codlin.
 Class 19, Section 4.—Paul & Son, Old Nurseries, Cheshunt——Transparent de Croncelles.
 Class 19, Section 4.—Henry Berwick, nurseryman, Sidmouth Nurseries, Sidmouth, Devon——Frogmore Prolific.

- Class 19, Section 4.—Chas. Turner, Royal Nursery, Slough——Holland-bury.
 Class 19, Section 4.—Balchin & Son, Hassocks Nurseries, Sussex——Hoary Morning.
 Class 19, Section 4.—John Peed & Sons, Mitcham Nurseries, Streatham——Belle Pontoise.
 Class 19, Section 4.—Will. Taylor, Osborn's Nurseries, Hampton——Pine Golden Pippin.
 Class 19, Section 4.—A. Wyatt, market gardener, Halton, Middlesex——Fearn's Pippin.
 Class 19, Section 4.—W. F. Gibbon, fruit grower, Seaford Grange, Pershore——Golden Noble.
 Class 19, Section 4.—John Watkins, Pomona Farm Nurseries, Withington, Hereford——Warner's King, New Hawthornden.
 Class 19, Section 4.—Thomas Rivers & Son, nurserymen, Sawbridgeworth——Peach Lord Palmerston, Monarch Plum.
 Class 19, Section 4.—J. Laing & Sons, Stanstead Park Nurseries, Forest Hill——Bismarck.
 Class 19, Section 4.—J. Cheal & Sons, Lowfield Nurseries, Crawley——Crab Edulis, Pear Doyenné du Comice.
 Class 19, Section 4.—W. Paul & Son, nurserymen, Waltham Cross——Cellini.
 Class 19, Section 4.—James Veitch & Sons, Royal Exotic Nurseries, Chelsea——Sandringham.
 Class 19, Section 4.—Royal Horticultural Society, Chiswick, W.——Braddick's Nonpareil.
 Class 19, Section 4.—Geo. Bunyard & Co., nurserymen, Maidstone——Apple Washington, Pear Doyenné du Comice.

SELECTED FROM THE GOLD MEDAL CLASS.

- Class 23, Section 6.—James Nicholson, gardener to W. Malles, Esq. Sewardstone Lodge, Chingford, Essex——Pear Durondeau.
 Class 23, Section 6.—J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Borrowash, Derby——Lord Lennox.
 Class 23, Section 6.—Geo. Reynolds, gardener to the Messrs. de Rothschild, Gunnersbury Park, Acton, W.——Lord Derby.
 Class 25, Section 6.—Samuel Barlow, J.P., Stakehill House, Castleton, Manchester——Peasgood's Nonesuch.
 Class 23, Section 6.—Charles Davies, The Mote Gardens, Maidstone——Gascoigne's Seedling, Pear Marie Louise.

FROM THE BRITISH FRUIT GROWERS' ASSOCIATION.

- P. Crowley, Esq., Waddon House, Croydon——Bismarck.
 Mr. H. W. Ward, gardener to the Earl of Radnor, Longford Castle, Salisbury——Pear Uvedale's St. Germain.
 Thos. Rivers & Son, nurserymen, Sawbridgeworth——King of Tomkins County, Rosemary Russet, Pear Pitmaston Duchess.

EXTRA.

- Mr. John White, Home Farm, Hampton, Prince's Risborough——Dumelow's Seedling.

The fruit was packed in two strong cases and sent carriage paid to Ballater, addressed to Her Majesty at Balmoral.

The Show was visited by upwards of 35,000 persons.

POTATO NOTES.

HARVEST came in with dripping skies and cold boisterous winds, a state of things disastrous to other crops as well as corn. Happily the bad weather was not of long duration, and before any real harm had been done the very best and brightest days in the whole year dawned upon us—days that made work a pleasure and put gladness into all hearts. The genial mellowness of a fine English September day is not to be equalled in any part of the world. Nature seems to be resting after her long exertions, and the sons of toil are on every hand gathering up the precious fruits of another year.

Stackyards are filled with golden grain—clean and free from storm stain, and work is rapidly progressing in all departments. The dry weather has much facilitated the cleaning of fallows and the digging of Potatoes. By-the-by, there appears to be no implement better fitted for tearing out twitch and other weeds than the rotary Potato digger. It fairly shakes off every particle of earth, and leaves the rootlets, bare and exposed, easy to gather up and to burn with the Potato tops. The digger makes far quicker better work if the tops are gathered off first, and this is an easy matter, and one quite worth the attention of the Potato grower.

Some rather interesting Potato experiments have been tried this year. The idea was to find out good croppers for general marketing, and of seventeen sorts grown only five are found to have any value for the ordinary farmer when marketed in the ordinary way.

Queen of the Valley proved the best and the soundest, but her rosy hue might not commend her to everybody. "Handsome is

that handsome does," be it pink or white. This was closely followed by

Sutton's Seedling, which was a good crop and fairly sound.

Reading Russet, good in quality, useful, but considerably diseased.

Snowdrop is a sound second early, but must be lifted early, as it is very liable to disease.

Sharpe's Victor is one of the earliest, but not at all a farmer's Potato, being too shy a cropper for field growth.

Sutton's Satisfaction is fairly sound and fairly prolific, beautiful in appearance, but at the present time, October 6th, not fit for culinary purposes.

These were all set in a field which was Red Clover mown, plentifully dressed with foldyard manure and 2 cwts. sulphate of ammonia per acre in addition; soil red cliff; season favourable save for three weeks of warm, muggy, disease-creating weather. In the same field the main crop was Sutton's Abundance, and as far as can be estimated the yield will prove something after this—deliverable Potatoes seven tons, seed three-quarters of a ton, and another three-quarters of offal; quality very good indeed, quite the Potato to set before a king, flavour not up to, say *Imperator*, but still very good. Half the field received, when Red Clover, 2 cwts. per acre of kainit, and that kainit has most certainly left testimony behind it in increased crops. Even to idle little boys pickers' work must have been pleasant this year, so clean, and dry and bright, no trudging home at night with soaked clothes and perished little bodies, it is difficult to estimate the blessings of a fine "back end."

In the same parish and under the same management is another large plot of Potatoes, grown on Wheatstubble. The soil is more or less cliff, but varies very much. This field had a good dressing of foldyard manure, and the half of it that was set with *Magnums* and Sutton's Abundance had in addition 2 cwts. of sulphate of ammonia and 2 cwts. of bonemeal per acre.

The *Magnums* have come up very clean, with no disease; the Potatoes are small, and the crop is below the average as regards bulk. Sutton's Abundance is slightly touched by disease, nothing that is of any consequence. The quality is most gratifying, and the yield fair. This, one would fancy, must be a good marketable Potato.

It was fully intended that the whole of the hand tillage should be used on the *Magnum* and Sutton's Abundance half of the field, but as a little was left over the adjoining first five rows of *Imperator* got the benefit, and it is certainly extraordinary what a difference there is between those five rows and the bulk of the crop. It certainly goes far to prove that *Imperators* do not require the amount of tillage that their more fancy brethren profit by. "Great bouncing 'taties,' and lots of 'em" is the report, and good as *Imperators* are it is quite possible to have them too big and gross. However, these great tubers keep up the weight per acre, and a use will doubtless be found for them, if not in the market perhaps in the steam house. The rest of the crop is good, sound, and saleable.

Many Potatoes have already changed hands in this district at prices varying from £22 to £24 per acre. This sounds a good price, but it must be borne in mind that the grower has to find all the labour, and will have out of that money to provide himself with seed and offals, and these offals often form an important article of food on a large farm, especially when there is, as will possibly be the case this year, a falling off of some of the root crops. Of course, again, there is a feeling of great relief, too, in thinking that the fluctuations of the market are of no moment to you, and that your money is earning interest. It is but poor slow work peddling out a great crop by two or three tons at a time, and there is always more or less waste in delivering from the stores. With keen competition on every side, and profit margins growing beautifully less, it is more than ever desirable that a successful grower should be a man ready to advance with the times, and by a judicious combination of capital and common sense place the best article in a rising market.—PARTS OF LINDSEY.

SYDMONTON COURT, NEWBURY.

THIS, the pleasantly situated residence of W. H. Kingsmill, Esq., lies between Kingsclere and Newbury, at about equal distance, and stands in its own park, which is well timbered, commanding extensive and beautiful views in the distant landscape. The dressed grounds, which are of moderately large extent, are enclosed on one side by park fence, and on the others by broad belts of shrubbery plantations extending to the highway, forming an excellent screen for shelter. The famous Hampshire hills which run in close contiguity forming a portion of the extensive estate, lend a pleasant aspect to the general surroundings, for unlike so many such elevated sites the range is clothed with verdure of the richest hue. On the lawn are some fine Cedars of Lebanon, Robinias, and other trees, with the pretty church in

the foreground. The open sward is unbroken by flower beds, so common in many establishments, but these are provided for in a strip of turf laying between the broad terrace and house, a position that displays the well planted beds to advantage. One of the most striking plants employed in bedding is *Begonia Princess Beatrice*, a variety remarkable for continuity of bloom and uniformity of growth. The flowers are white with a pinkish hue pervading them, but this may be less pronounced in the earlier part of the season.

The glass structures are all conveniently arranged in an enclosed yard, at an easy distance from the house and closely adjoining the kitchen gardens, from which good crops of Peaches, Grapes, Tomatoes, Melons, Cucumbers and decorative material are produced in quantities and of the best quality. It is supposed that a monastery once existed here, a courtyard of those days being now a charming spot filled with herbaceous and annual flowering plants, the walls covered with Roses. The annuals are planted in circular beds cut out in the turf, and are drawn upon largely for the cut flower supplies. A beautiful specimen *Arundo conspicua* occupies a central position, the other beds being disposed equidistant on all sides. Although an excellent all-round gardener, Mr. Lye, who has charge of this department of Sydmonton Court, excels in the art of vegetable production, which reports of various shows frequently testify, his success during the current season being quite phenomenal. No less than twenty-six first prizes have been awarded to him, and only one third, which alone is sufficient guarantee of his ability and painstaking workmanship, for he has secured them in the best of company. The great event of the season with vegetable competition was at Reading, where a first prize of 15 guineas and five others of proportionate value were offered. This brought together, as was expected, one of the largest displays of garden produce ever presented in a single class, and it was a feat of no mean order to secure an easy first among some of the best growers of the day.

True, facilities are here presented such as do not fall to the share of many growers, and this is found in the natural soil and shelter, but, on the other hand, the most is made of it by judicious cropping. Mr. Lye being one of those far-seeing men who plans and prepares his ground in the autumn and winter for the next year's crop. Runner Beans are enormously prolific, represented by no less than three types of the *Ne Plus Ultra* strain, one of them grown on trial being apparently a good advance on the original. These are grown in heavily manured trenches, and planted so that they are in full light, and the seeds a foot apart in single rows. Onions, again, are of immense size, and many sorts are on view, but it must be understood these are not produced under the usual practice of sowing outdoors, but have as much care expended on them as required for early Celery. Carrots and Parsnips are of perfect shape, in fact as clean as though machine made. This fact alone is sufficient to indicate the nature of the soil. The most beautiful and extensive plantation of Parsley I have met with this year is seen here, the destructive root pest that has wrought such havoc generally being absent, a bed of Dobbie's Extra-curved being grand in the extreme.

Celery which was prepared for autumn and winter supplies is overtaken with disease, so virulent as to affect the whole of one large plantation, many of them succumbing under its influence. The leaves are thickly covered with red rust-like spots, the cause for which it is difficult to assign a reason for. This disease is quite new to everyone who has yet seen it as displayed at Sydmonton.

Violets are grown largely and well, mostly of the *Marie Louise* variety, and Mr. Lye treats a portion of the stock in pots with more than ordinary success. They are potted the end of September, and stood in a sheltered spot outdoors for a short time, and transferred when partially re-established to shelves in the vineries, where they invariably give good returns in high-coloured flowers. Chrysanthemums, which are grown in moderately large numbers, are cultivated on the large bloom principle, mostly in 8-inch pots, and look promising for a good display later on. Apples are abundant on standard orchard trees, but Pears do not crop so freely. Peaches protected by a coping of glass are doing well, some recently planted trees growing with remarkable freedom on a south wall. Altogether this interesting garden reflects much credit on its chief, who is well supported by Mr. Kingsmill in the various items connected with such an establishment, which cannot be otherwise than appreciated.—S.

ROYAL HORTICULTURAL SOCIETY.

OCTOBER 14TH.

IN addition to the exhibits before the three Committees, which were numerous and interesting, a special feature was provided in a display of preserved fruits and jams. Medals and certificates were offered, and several were awarded for the best representative collections. At the afternoon meeting Sir Charles Strickland, Bart., read a paper on "Crinums," but owing to the foggy weather the attendance was not large. The floral exhibits were arranged on two central tables, the fruit, both fresh and preserved, being placed on side tables, and, with the groups of Chrysanthemums, there was not much unoccupied space.

FRUIT COMMITTEE.—Present: Sir C. W. Strickland, Bart., in the chair, and Rev. W. Wilks, Dr. Hogg, Messrs. T. F. Rivers, John Lee, G. W. Cummins, J. Denning, W. Bates, J. Smith, H. Balderson, J. Hudson, F. Q. Lane, A. H. Pearson, R. D. Blackmore, and G. Wythes.

Ripe fruits of *Figue d'Agen*, the latest Fig in the Royal Horticultural Society's collection, were placed on the table by Mr. Barron. The fruit

is medium sized, roundish, green, with clear white fissures. The flesh is red, juicy, and sweet. Its chief merit, however, consists in its ripening well so late in the season.

A seedling Apple named *Chorister Boy* was sent from Messrs. Keynes, Williams, & Co., Salisbury; it is a conical Apple, but as shown possessed no distinct quality, and as no information was communicated relative to the bearing of the tree or the keeping properties of the fruit it was passed. A seedling unnamed Apple was sent by Mr. J. Hazzard; it is of the Codlin type, but not equal to others in cultivation. Apple *Duc d'Aumale* was sent by Mr. Lewis Castle from Merton; it is a large firm Apple with a distinct aromatic flavour, but was considered rather dry, and no award was made. A seedling Apple was sent by Mr. G. Jones, Greenford Place, Sudbury, medium sized but inferior, and therefore passed. Mr. James Smith, Newark, sent a small Apple, not named; it was thought to resemble the local Yorkshire Apple *Elmender*, and did not merit any special mark of recognition. A dish of fine fruit of "D. T. Fish" Apple was placed on the table by Mr. H. Balderson, with the object of determining its identity with *Warner's King* or otherwise. It was unanimously declared identical with *Warner's King*. Mr. R. Fenn sent dishes of a medium-sized Apple from Sulhampsted, named "Pay-the-Rent." It was spotted in the skin, deepening into the flesh, and hence was passed. After all those failures in Apples a success was at last arrived at in *Beauty of Stoke*, from Mr. R. Doe, The Gardens, Rufford Abbey, Allerton, Notts. Fruits were before the Committee in December last year, Sir Charles Strickland being requested to test their cooking quality. He did so, and found it excellent. Mr. A. H. Pearson was also requested to inspect the trees at Rufford, and having done so and reported them as of good growth and productive, a first-class certificate was awarded. The fruit is large, somewhat conical, of a uniform brown russet appearance, and very heavy. The variety is of the Alfriston type, but distinct and of considerable promise.

A large oval shaped, well netted Melon was sent by Mr. A. Bishop, gardener to R. Burrell, Esq., Westley Hall, Bury St. Edmunds. It was named *Westley Hall* by the Committee for the purpose of recording the first class certificate that was awarded. It is a scarlet flesh, tender, and of rich flavour. Fine fruits of *Monstera deliciosa* were sent by Mr. G. Wythes from Syon House; they were exceedingly rich in flavour, and a cultural commendation was awarded. Mr. Wythes also sent fruits of a large red Banana, name unknown, for which a similar award was granted. Messrs. Jarman & Co., Chard, sent a small collection of Apples, for which a vote of thanks was awarded. Mr. James Hudson, Gunnersbury House Gardens, sent a box of Golden Noble Apples, uniform in size and good, and was accorded a cultural commendation. A collection of different kinds of fruit and Nuts were exhibited by Mr. Fenn, and a vote of thanks awarded; also for some home-made wines, which, however, had been treasured up too long. Messrs. Gayman & Son, Barham, Attleborough, sent a collection of Apples from Norfolk from which they make cider. A bronze medal was recommended. Messrs. Wm. Paul & Son, Waltham Cross, staged a large and valuable collection of Apples, for which a silver medal was unanimously recommended. Baskets of well-fruited sprays of October Red and White Raspberries were arranged with the collection.

Mr. Roffey, Croydon, was awarded a vote of thanks for fine seedling fruits of his selected Telegraph Cucumber, and a similar award was recorded to Mrs. Alexander Dean for interesting examples of jam and syrup preparations of Tomato, Carrots, Vegetable Marrow, and Beet-root, the first and last named, perhaps, finding the most favour with a majority of the members present.

FLORAL COMMITTEE.—Present: John Fraser, Esq., in the chair, and Messrs. B. Wynne, T. Baines, R. Dean, W. C. Leach, J. Walker, R. B. Lowe, T. W. Girdlestone, H. Turner, D. Jeffries, H. B. May, G. Paul, and Rev. H. H. D'Ombraim.

From E. Mawley, Esq., Rose Bank, Berkhamsted, came a most tasteful group of Roses, Dahlias, Chrysanthemums, and Begonias arranged in baskets, stands, and dishes. Ferns, Asparagus, and other foliage were employed with excellent effect, and the whole being disposed on a white cloth had a charming appearance. It was an innovation that might well be repeated, the award of a silver medal being amply merited. Mr. H. B. May, Upper Edmonton, contributed a handsome group of Crotons, Dracenas, Ferns, and other foliage plants, which occupied the whole length of one table. A silver-gilt medal was awarded. Mr. H. J. Jones, Hither Green, Lewisham, had two bright and tasteful groups of Chrysanthemums at the ends of the tables, for which a silver Banksian medal was awarded.

Mr. G. Fry, Lewisham, sent a plant of a seedling Fuchsia raised from triphylla and named *albo-carminata*. It had pale salmon drooping flowers, delicate, but not showy. Sir C. W. Strickland, Bart., exhibited specimens of a bright purple flowered *Achimenes*, said to have been obtained from an imported plant of *Epidendrum raniferum*. Mr. R. Mitchell, Orleans House Gardens, Twickenham, showed good blooms of *Chrysanthemum Mrs. Alpheus Hardy*. Mr. C. J. Salter, The Gardens, Woodhatch Lodge, Reigate, had three blooms of a bronzy yellow sport from the Japanese *Chrysanthemum* Mr. H. Wellam named *Memoir*. They were quite distinct in colour and the characters seemed well fixed, but the blooms were rather rough. Messrs. Pitcher & Manda also sent several new Japanese Chrysanthemums, one named Elliott F. Shepard having large bright yellow blooms like Peter the Great; Mohawk, in the way of E. Molyneux; and Clarence Bryant, a neat yellow reflexed Japanese.

Messrs. W. Paul & Son, Waltham Cross, contributed six boxes of

autumnal Roses, beautiful fresh fragrant blooms, such as are seldom seen at the middle of October (silver Banksian medal. Mr. C. Turner, Slough, had two boxes of twenty-four fine Dahlia blooms, the last of the season, for the frost of Tuesday morning at Slough was rather severe (bronze Banksian medal). Messrs. J. Veitch & Sons sent a box of the Javan hybrid Rhododendrons in many varieties. The flowers exceedingly bright, and the frequency with which they are shown throughout the year affords abundant proof of the usefulness of the plants (vote of thanks).

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq., and Messrs. S. Courtauld, J. Douglas, H. M. Pollett, J. O'Brien, E. Hill, J. Dominy, and Lewis Castle.

Mr. Alfred Sanders, 146, Camden Road, N.W., sent a plant of *Odontoglossum grande* with twenty-two large flowers. It was stated that in 1888 it had eighteen flowers, and in 1889 it had twenty-three flowers. The plant was in excellent health, and as an amateur's production especially meritorious. A cultural commendation was awarded. J. Crispin, Esq., Fishponds, Bristol, sent a large well-flowered plant of *Lælia Perrini* on a block (vote of thanks).

Baron Schröder, The Dell, Egham (gardener, Mr. Ballantine), contributed a small group of choice Orchids, comprising three plants of *Dendrobium Phalaenopsis*, bearing three to seven large richly coloured flowers each; the elegant soft rose-tinted *Cattleya Fausta*, certificated in 1874; *Cypripedium Fairrieanum*, with six flowers; and *Cattleya Imschottiana* (certificated). The *Dendrobiums* were greatly admired, for rarely are such fine examples of this handsome species seen in cultivation.

In addition to *Bulbophyllum amplum*, for which a botanical certificate was awarded, Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking, showed a plant of *Epidendrum radiatum fucatum*, having pale creamy flowers, the lip streaked with dark radiating lines. Messrs. Pitcher & Manda, Hextable, showed a plant of *Lælia Arnoldiana*, having crimson-tipped flowers clustered near the apex of a long spike in the style of *L. autumnalis*.

M. Linden, Brussels, sent a small group of Orchids, conspicuous amongst which were several plants of *Cattleya Warocqueana*, showing considerable variation in size and colour of the flowers. Two of these were selected for certificates as the most distinct and meritorious, but the opinion was that the series of forms under the type *Warocqueana* would prove useful as late flowering *Cattleyas*. *Lælia grandis vera* and *Aganisia cyanea* had been previously certificated, and *Mormodes maculata*, with peculiar dark flowers, was passed.

Mr. W. C. Atkinson, Aigburth, sent fair flowers of *Vanda cœrulea*; and Capt. Hincks, Breckenbrough, Thirsk, showed a flower and photograph of *Masdevallia Stella*, a hybrid from M. Harryana and M. Estradae, but it was not seen to the best advantage, as the flowers had a faded appearance. The sepals are pale purplish mauve, with a deeper rosy purple base, and long yellow tips.

CERTIFICATED PLANTS.

Angræcum Kimballianum (W. Vanner, Esq., Camden Wood, Chislehurst).—A botanical certificate was awarded for this plant, one of the small white flowered species; the lip like a diminutive *A. eburneum*, the sepals and petals very narrow and twisted.

Cattleya Imschottiana (Baron Schröder).—A pretty variety of the *C. aurea* type. The sepals and petals creamy white, the lip crimson veined gold.

Bulbophyllum amplum (Sir T. Lawrence).—A peculiar Orchid, with unusually large flowers for a *Bulbophyllum*, creamy yellow sepals and petals dotted with red, the lip broad, and of a maroon tint (botanical certificate).

Catasetum Bungeirothi var. *Randi* (Linden).—Distinguished from the type by the flowers being yellow, the lip having an orange centre (award of merit).

Cattleya Warocqueana flammea (Linden).—A handsome variety with deep rosy sepals and petals, the latter broad and spreading; the lip is long, having an orange throat, and is streaked with crimson on a lighter ground towards the tip. Very strong and free (first class certificate).

Cattleya Warocqueana amethystina (Linden).—Flowers somewhat smaller than the preceding, but of better colour, the sepals and petals very crimson, the lip a rich magenta; very effective (first class certificate).

Cattleya aurea var. *Lindeni* (Linden).—A bold handsome variety, the sepals and petals bright yellow; the lip very broad, deep crimson tipped, and rich gold margins (award of merit).

Cattleya Buyssonianana (Linden).—Very distinct, with narrow, fleshy, creamy yellow sepals and petals; the lip narrow, contracted in the centre, pale crimson (award of merit).

Richardia æthiopica, *Little Gem* (Mr. H. Elliott, Jersey).—A dwarf variety of a well known plant, and likely to be useful for culture in pots. The berries and spathes are considerably smaller than the ordinary type, and the height of the plant shown in a small pot did not exceed 12 inches. It seems to be free, and the neat little spathes were pure white (award of merit).

Bouvardia Purity (H. B. May).—Flowers pure white, of great size and substance, the corolla lobes broad and rounded. The flowers are borne in large trusses and freely produced (award of merit).

Chrysanthemum Annie Clibran, *Pink Mdlle. Lacroix* (Jones and Ware).—Under the former name Mr. Jones of Lewisham had some good blooms of the pink sport from Mdlle. Lacroix, the colour of which is

most marked in the older blooms. They open very pale, and gradually deepen to a soft pink—a rather pleasing shade in a good light, but it looked dull at the Drill Hall. Mr. Ware's blooms were similar to the above, but were shown as "Pink Lacroix" (awards of merit).

Cunilla Mariana (Pitcher & Manda).—A member of the family Labiatae, known in North America as the Common Dittany. Gray mentions that it is found on dry hills south of New York and westward, flowering from July to September. The plant is about a foot high, bushy in habit, producing small tubular lilac flowers in profusion. The leaves are ovate, and the whole plant has an aromatic odour (award of merit).

PRESERVED FRUITS AND JAMS.—Amongst the exhibitors in this portion of the Show Messrs. Beach & Sons had an attractive stand of bottled fruits and jams, for which a silver Knightian medal was awarded. Other exhibitors who had interesting stands were Messrs. G. Chivers and Son, Cambridge; Margetts & Co., Kingsland Road; D. Macgregor, Edinburgh; and J. E. Austin, Kingston-on-Thames. Sir C. W. Strickland, Bart., sent good samples of wild Strawberry jam and Blackberry jelly. Mr. J. Edmunds, 10, Stonefield Terrace, Liverpool Road, London, had specimens of preserved Mangoes, Guavas, Vanilla, &c. Mrs. Shore, Newington Green Road, sent some jams; and the Mid-Kent Fruit Factory, Tonbridge, had a stand of jams and preserved fruits.

One of the most interesting exhibits was a collection of syrups, preserved fruits, candied fruits, dried fruits, sweets, also Tomato paste and Olives as used in Turkey from Messrs. James Veitch & Sons, Chelsea. These comprised the following:—Syrups: Orange, Madella Cherry, Rose, Raspberry, Verjuice (sour Grape), Strawberry, Mandarin Orange, Pine Apple, Cornel, Tamarind, Isnicola Raspberry, Grape treacle. Preserved Fruits: Arabian Apricots, Cornel Berries, Orange, Madella Cherries, Apricot, Quince, Broussa Peach, Pear, Apple, White Plum, Citron, Egg Plant, Walnut, Date, Peach, Strawberry, Jujube, Fig, Prunes, Raspberry, Rose. Candied Fruits: Pear, Apricot, Orange, Persian Fists, Almonds, Citron. Dried Fruits: Mecca Dates, Smyrna Pears, Arabian Apricots, Manna, Cretan Locust, Arabian Apricot paste, Madella Cherries from Kutajah Anatolia. Sweets: Vanilla, Black Cherry, Rose, Bergamot, Mastik (handed to guests to be taken by a spoon, with water afterwards), Tomato paste, Black Olives.

Common articles of food offered for sale on barrows in the streets of Constantinople: Baked Teblebee, unbaked Teblebee, baked Nuts, St. John's Bread (John the Baptist's Locust), baked Pistacio Nuts, American Earth or Butter Nut, Persice Apricot, baked Pumpkin seeds, Sunflower seeds, Stone Pine seeds, used for kitchen purposes, pastry, &c.

AMERICAN SHRUBS.

Gordonia Altamaha (*G. pubescens*) is flowering in the Arnold Arboretum, the first blossoms opening about Sept. 8th. The plant here requires covering in winter, but it is in a too exposed and rather unsuitable position for one of its kind. There are doubtless many sheltered gardens and nooks in the city of Boston and vicinity where it would survive our winters without protection and eventually become a good sized shrub. We are unable to grow the great evergreen or Laurel Magnolia of the south, but this *Gordonia*, or *Franklinia*, as it is often called, seems of a hardier nature, and is well worth a trial in favourable places. Our seasons are so short that the later flower buds do not develop into blossoms unless protected from early autumn frosts; but in any case enough flowers are produced to fully repay the little care given to it and the space it occupies. The beautiful, pure white, delicately fragrant, single Camellia-like blossoms expand 3 inches across, and the cluster of stamens within is bright yellow. The corollas do not persist long, however, and usually become detached and fall thirty-six or forty-eight hours after expansion.

Clerodendron trichotomum is another shrub which in this latitude would be worth growing in sheltered situations, and would well repay any care given to it. This is a Japanese plant belonging to the Verbenaceae family, and although it is a good many years since it was introduced into Europe, it is still very rare in America. In this climate the stems are often so severely injured in winter as to seriously affect the flowering. Last winter being less severe than usual, the branches were but slightly injured, and they now bear numerous cymes of sweetly fragrant flowers. This *Clerodendron* in its native habitat is a large shrub or sometimes a small tree. The branches are round, smooth, and stout. The leaves are usually large, ovate, or sometimes cordate, pointed, and more or less pubescent on both surfaces. When bruised they exhale a heavy and rather disagreeable odour. At a little distance the foliage resembles that of a small-leaved Catalpa more than any other familiar plant. The flowers are borne in large, much-branched cymes on the ends of the branches. The blossom is white or sometimes slightly rosy coloured, and expands about an inch across, and it bears four stamens and a slender pistil, which protrude about an inch from the mouth. The narrow, very slender tube of the corolla is about an inch in length, all the lower portion being enclosed in a loose, five-angled, purplish red calyx, which adds much to the showy effect of the flower, and which is conspicuous when enclosing the unopened buds as well as after the corolla has fallen. The flowers of a cyme open here in gradual succession, beginning about the first week of September. It is said that in Japan this plant grows high up on the mountains, and in rich soils produces panicles of flowers 18 inches or more in length. It is possible that by getting seed from the extreme northern limits or the highest altitudes where this species grows, we may secure a race better able to withstand

the severity of New England winters. Besides propagation by seeds, which will hardly have time to ripen in this latitude, this *Clerodendron* may be increased by cuttings from the shoots or roots.

other early writers, although reduced to the rank of a variety of *C. alnifolia* by Michaux. It is a hundred years since it became known in European gardens. Later botanists, however, seem to consider it as but



FIG. 39.—PEASGOOD'S NONESUCH APPLE, GROWN BY MR. S. BARLOW. (See page 336.)

An interesting plant for gardens is a *Clethra* from the Southern States, to which Lamarck, in his "Botanical Dictionary," gave the name of the Cottony *Clethra*, or *Clethra tomentosa*, a name which was preserved by De Candolle in his "Prodromus" and kept up by Loudon and

a mere form of the common Sweet Pepperbush (*C. alnifolia*), and we look in vain for any reference to it, either by name or description, in the last edition of Gray's "Manual." In some of the earlier editions of the "Manual," however, it is stated that "in the Southern States are

varieties with the leaves rather scabrous and pubescent or white-downy beneath."

Although the pubescent variety, which the earlier botanists knew as *C. tomentosa*, may not be entitled to specific rank in the botanical classification of to-day, it is nevertheless sufficiently distinct in the estimation of the horticulturist to merit some name which would indicate a difference from the ordinary typical *C. alnifolia*. In cultivated specimens in the Arboretum the leaves are larger than those of *C. alnifolia*. They are rugose above, and densely covered with a greyish white tomentum beneath. In typical *C. alnifolia* the leaves are more smooth above and smooth and light green in colour beneath, being quite destitute of any pubescence or hairs. The individual flowers, as a rule, are nearly twice the size of those of *C. alnifolia*, and they differ also in that the petals assume more of a bell shape, and do not spread out so widely. The slender, pointed, terminal racemes of flowers average considerably larger, and many of them are supplemented by three or four well developed; but smaller racemes, which, springing from the side near the base of the central one, come into bloom later than it does. To the horticulturist, however, the most important character lies in the time of flowering of the plants. Growing side by side in cultivation and under exactly similar conditions the first blossoms of *C. alnifolia* open in the last days of July (July 22nd in 1889 and 31st in 1890), while the first of those of what we may call *C. tomentosa* do not appear until three weeks later (August 12th in 1889 and 19th in 1890), by which time *C. alnifolia* is past its best flowering, although in woods and other cool places it is found much later. The latest buds of the tomentose variety are not expanded by the middle of October, so that they are usually destroyed by frost, and fruit is never matured. As this tomentose *Clethra* is only recorded from Virginia, Carolina, Alabama, and other Southern States, it is naturally not so hardy as our northern one. The flowers are quite as fragrant as those of *C. alnifolia*. On account of its extreme lateness in blossoming this southern variety, or form as it may be, seems likely yet to become recognised and valued by gardeners at least, and to find a place in every garden where shrubs of this class are prized.—J. G. JACK, *Arnold Arboretum* (in *American Garden and Forest*).

CRYSTAL PALACE FRUIT SHOW.

OCTOBER 9TH, 10TH, AND 11TH.

FOLLOWING the Guildhall Show so closely, it might have been expected that the Sydenham Exhibition would have suffered by the contrast, but this was not the case, as while the best of the exhibits from the previous display were staged at the Palace, the better light there showed the fruits to more advantage. Four long lines of tables in the northern portion of the Palace were occupied with fruits, principally Apples, and Mr. W. G. Head, the superintendent, arranged them most effectively, the centre of the tables having dividing lines of small foliage plants. Vegetables and miscellaneous exhibits were placed on side tables, and also filled considerable space.

The exhibitors and their contributions were so similar to those at the Guildhall that it is unnecessary to repeat them here, and the following prize list will suffice to show the order in which the awards were made. It must, however, be mentioned that the non-competing exhibits formed an admirable portion of the Show, especially those from Messrs. J. Veitch & Sons, Chelsea; J. Cheal & Son, Crawley; G. Bunyard & Co., Maidstone; H. Cannell & Sons, Swanley; J. Peed and Son, Streatham; Reid & Borneman, Jarman & Co., Chard, and the British Fruit Growers' Association.

OPEN CLASSES.—For best exhibition of Apples, kitchen and dessert, six fruits of each variety, not to exceed 100 dishes (distinct), orchard house grown fruit excluded.—First, Messrs. George Bunyard & Co., Maidstone, Kent. Second, Mr. J. Watkins, Pomona Farm Nurseries, Wittington, Hereford. Third, Mr. C. G. Sclater, Devon Nurseries, Heavitree, Devon. Fourth, The English Fruit & Rose Co., King's Acre, Hereford.

For best exhibition of Pears, six fruits of each variety, orchard house grown fruit excluded.—Second, Mr. G. Woodward, Barham Court Gardens, Maidstone. Third, Mr. J. Watkins, Hereford.

For best exhibition of vegetables, arranged for effect, and not more than four dishes (distinct) of any sort.—First, Mr. T. A. Beckett, Cole Hatch Farm, Penn, Amersham, Bucks. Third, Mr. W. Palmer, gardener to the Right Hon. Hume Dick, Thames Ditton.

For the heaviest Gourd or Pumpkin, weight to be stated.—First, Mr. George Shepherd, Lower Street, Pulborough, Sussex. Second, Mr. C. Boatwright, Beckenham Place, Beckenham. Third, Mr. E. C. Gaseltine, gardener to E. Byron, Esq., Coulson Court, Caterham.

For a collection of Pumpkins and Gourds.—First, Mr. G. Sturgess, gardener to B. P. Fearon, Esq., Court House, Banstead. Second, Mr. C. Osman, gardener, South Metropolitan District Schools, Sutton. Third, Mr. C. Boatwright.

For a collection of Ornamental Gourds.—Messrs. C. Osman, G. Sturgess, and C. Boatwright.

AMATEURS.—Twenty-four dishes of Apples, kitchen and dessert, distinct, six fruits of each.—First, Mr. G. Woodward. Second, Mr. A. Waterman, gardener to H. A. Brassey, Esq., Preston Hall, Aylesford, Third, Mr. S. Barlow, Stakehill House, near Manchester.

Twelve dishes of Pears, distinct, six fruits of each.—First, Mr. W. Chisholm, Cap Harcourt Rose, Oxenoth Park, Tunbridge. Second, Mr. G. Woodward. Third, Mr. William Allan, gardener to Lord Suffield, Gunton Park, Norwich.

Twelve dishes of Apples, kitchen and dessert.—First, Mr. T. A.

Killick, Weavering, Maidstone. Second, Mr. T. Parker, gardener to Mrs. Evans, Moreton Court, near Hereford. Third, Mr. S. H. Goodwin, Mereworth, Kent.

Twelve dishes of vegetables, not more than two dishes of any variety.—First, Mr. R. Lye, gardener to W. H. Kingsmill, Esq., Sydmonton Court, Newbury. Second, Mr. W. Pope, The Gardens, Highclere Castle, Newbury. Third, Mr. C. J. Waite, gardener to Colonel the Hon. W. P. Talbot, Glenhurst, Esher.

SPECIAL PRIZES.—Messrs. James Carter & Co.'s prizes for the best dishes of Holborn Abundance Potatoes and King of the Russets Potatoes, nine Potatoes to form a dish, were won by Messrs W. Pope, Highclere Castle Gardens, Newbury; R. Lye, Sydmonton Court, Newbury; and F. J. Hazell, Rose Cottage, Histon Road, Cambridge. For the best six dishes of Potatoes by Messrs. R. Lye; W. Pope, Newbury; F. J. Hazell, Histon Road, Cambridge; E. S. Wiles, Edgecote Gardens, Banbury; C. J. Waite, and C. W. Howard, Bridge, Canterbury.

Messrs. Sutton & Sons' prizes for the best collection of vegetables, six distinct varieties, were won by Messrs. C. J. Waite, T. A. Beckett, W. Pope, and R. Lye.

CELEBRATED FIG TREES.

THERE is not, perhaps, an animal or plant, and certainly there is not a star visible in the firmament, which has not been the object of worship, and to which poor human beings have not offered sacrifices. Trees have, perhaps, been worshipped more than animals. Each tree has its legend, often its special mode of worship, and this is not always without reason. A custom exists, for example, that in certain countries a tree should be planted to celebrate certain events, and perpetuate their memory. Such is the origin of the Trees of Liberty, of which such use and abuse was made in 1848 and since. To other trees is attached the souvenir of certain historical facts, such as the Arles Love Tree, under which the good king René administered justice; the Oak of St. Louis, that of St. Vincent de Paul; but this does not constitute a worship.

Some of these celebrated trees have been described. Let us say a word about the Fig tree. In antiquity it enjoyed great celebrity. The peoples of Greece rendered it a veritable worship. Some regarded it as a gift of the gods, and consecrated it to Mercury, Saturn, and Bacchus; others employed it to crown most of their statues and adorn their brows at public festivals. There were some celebrated Fig trees more particularly worshipped. There was one in Rome at the time of Pliny where the assemblies of the people took place. It was religiously tended in memory of that under which Romulus and Remus were found by the side of the wolf, their nurse. A Fig tree also grew at the spot where Curtius had generously sacrificed his life. The Indians at the present day worship a Fig tree of their country the Pagoda Fig tree. The god Vishnu, having been born under its shade, it is a sacrilege to cut it down, or even break its branches.

Native of the meridional countries of Greece, the Fig tree is to-day naturalised in all the hot climates of Europe, Africa, and America. Its products are lucrative for the Provincials and the inhabitants of Bas-Languedoc, who cultivate it in fields like the Olive. It is asserted that it was imported into these countries 600 years B.C. by the Phocéans, founders of Marseilles. It grows in Provence to a height of 5 or 8 metres.

The *Ficus cerifera* supplies the Getah Lahoë, or Sumatra wax. *Ficus venenata* produces a poisonous juice, with which the Indians of Guiana poison their arrows. *Ficus tinctoria* of the borders of the Amazon is utilised against tœnia. Another species produces fruits in which are found certain properties for the cure of rheumatism. *Ficus religiosa* gives shelter to an insect which produces an esteemed lacquer.

The wood of the Fig tree is valueless in commerce. On account of its spongy nature it absorbs fairly well oil and fatty substances. The locksmiths use it to polish their work. It burns badly, but gives a rather light coal. Some twenty-five years ago a magnificent Fig tree of more than 2 metres in circumference was a subject of admiration in a garden of Montpellier. Iron bands encircled it, to support its partially dried and divided trunk. It produced two abundant crops of Figs, and its owner let them at the rate of 50 francs per annum to a wholesale merchant. This tree, remarkable for the country, was far from attaining the dimensions of certain Fig trees of hot countries.

Dumont d'Urville described an immense Fig tree, the bushy branches of which cover a large space in the Bay of Anna Maria, at Nouka Hiva, in the centre of a village. This tree measures 25 metres in circumference. The trunk is composed of thick interlaced stems; it preserves almost the same width to a height of about 13 metres, then it divides, forms about fifteen thick branches, several of which are 2 and 3 metres in circumference. These last spread themselves horizontally, so as to cover with their shade a circular space of nearly 100 metres in diameter. The principal stream of the valley flows under this majestic tree.—COSMOS.

THE FIG TREE OF ROSCOFF.

The Fig tree, as is known, does not thrive much under the climate of the north and of the centre of France; its fruits rarely ripen; but in Brittany and the Normandy Isles it grows well, on account of the relatively mild temperature of these countries. Fig trees grow generally in Brittany in places sheltered from the north and north-west winds; they hardly rise above the houses which shelter them. Their dimensions are about that of an Apple tree.

There exists on the road of Saint Pol-de-Leon at Roscoff near this last village, a celebrated Fig tree, the exceptional form and dimensions

of which are worthy of notice. This tree is hardly higher than other Fig trees of the same country; its height is from 4 to 5 metres, but it covers with its branches a considerable extent, which may be estimated at about 400 square metres. It is situated in the kitchen garden of a large farm; the single trunk, somewhat low and twisted, is partially buried in a thick enclosure wall, which fact renders the estimation of its size very difficult; the section of the trunk is, we think, about 15 square decimètres, corresponding to a tree of 40 centimètres in diameter. From this trunk, and at 1m. 80 about from the soil, run horizontally and in every direction, a considerable quantity of branches, some of which spread themselves to a distance of more than 15 metres from the trunk. These large branches serve as basis for a cluster of small branches which rise towards the light, forming a kind of roof of verdure.

We can easily understand that a tree arranged in such a way cannot support itself. The thick branches lean against the enclosure walls of two small kitchen gardens, and on thirty-eight granite pillars, each formed of a single stone about 2 metres high and 30 to 40 centimètres thick. Between the two rows of parallel pillars is a covered alley of about 25 metres long. Beyond the last range of pillars the branches fall as far as the ground. When for the first time I saw this tree in the month of September, 1884, it was covered with leaves still green, which formed a thick shade; the Figs seemed rather numerous and were beginning to ripen.

I was curious enough to ask the farmer for some information about this extraordinary tree. I give his answers, which unfortunately are rather vague. "About what age is the tree," I asked him. "Sir," he replied, "the old people of the country have always seen it as it is at present." "How many ripe Figs does it give yearly?" "As many as you like; in spite of plucking them every day there always remain some more." "But how many do you take every day?" "Several basketfuls during the season—that is to say, during two or three months." "Does this tree still grow?" "Yes, sir; it would cover all the property if it were allowed to grow. I am obliged to cut every year the ends of the branches which come out of the alley."

However vague these observations may be I fancied that they were interesting enough to be noted, the more so as the Fig tree of Roscoff, in spite of its reputation, has not to our knowledge been described in a complete manner. This tree, although very old, is still very vigorous, and bears excellent fruits in abundance; in spite of the disproportion existing between the dimensions of the trunk and those of the branches these last have still enough sap to continue to grow. A peculiarity which is rather strange is that the vegetation, rather rich in the environs of Norbaix and Saint-Pol-de-Leon, ceases so to speak where the Fig tree grows. Starting from the farm on which the tree is situated the sea wind scorches and lays the trees, which are stunted and thinly scattered over a soil arid and stony as far as the sea.—(*La Nature*.)

THE PINE APPLE.

DURING the last few years I have grown and ripened the fruit from the suckers in the same house. The last twelve months I have cut twenty-nine Pines, weighing 132 lbs. 14 ozs., the heaviest 10 lbs. 8 ozs., the lightest 2 lbs. 13 ozs. I cut the first Pine on October 4th, 1889, the last on September 20th, 1890. The house is span-roofed, 22 feet 6 inches long, 18 feet 6 inches wide, with side lights 2 feet high, and one entrance. The house is heated by four rows of pipes on each side and four rows of pipes under the Pines. The bed is in the centre of the house. It is 17 feet long, 7 feet 6 inches wide, filled with tan 2 feet deep. Fresh tan is added to the old tan in spring and autumn. The latter is drenched with hot water to kill the insects. We grow between fifty and sixty plants. The soil we pot the suckers in is fresh fibrous loam, adding bone meal, soot, and charcoal. The fruiting Pines are placed at the warmest end of the house, and the suckers at the other end. In the winter we avoid high temperature by day, not exceeding 70°. Great care is taken in the supply of water, and I find they are better dry than wet. Diluted cow manure and soot are supplied, but we do not use the evaporating trough for moisture, and only lightly syringe the Pines twice a day in the summer. We distribute plenty of water about the house in hot weather. The Queen and Smooth Cayenne I find the most useful varieties. Care is taken to prevent white scale attacking the Pines. Each side of the house over the pipes is employed for growing small plants, and we find the house a useful one. I am sorry to hear it said the Pine Apple is not worth growing now foreign fruits are so cheap.—WILLIAM KIPPS, *Walton Lea, Warrington*.

AN EDIBLE FUNGUS OF NEW ZEALAND.

HIRNEOLA POLYTRICHA.

FOR some years an edible fungus, a product of the New Zealand forest, has become an important article of commerce between that colony and China. The fungus belongs to the same genus as the European Jew's Ear (*Hirneola auricula-judæ*), a tough but gelatinous fungus, formerly in reputation as an ingredient in gargles. The New Zealand fungus now under notice (*Hirneola polytricha*) is well described by W. Colenso, Esq., F.R.S., in the Transactions of the Penzance Natural History and Antiquarian Society, 1884-85:—

"*Hirneola polytricha* was first made known to science by Montagne as belonging to this genus, and as being an inhabitant of the East Indies and Java, though, like our two other species, it was first published as belonging to the closely allied genus *Exidia*, there being but a very small

natural difference between these two genera. This species is thus briefly described by Berkeley (translated and abridged from Montagne): 'Sub-hemispherical, cup-shaped, expanded, lobed, densely villous externally with grey hairs, disk purplish-brown.'

"It is of various sizes and, I might almost add, of shapes; some measuring a few inches, and when wet filling a large teacup or small basin; a large specimen weighing only 2½ drams. It is found growing on the trunks of many trees, both on living and on rotten ones (especially on the latter while standing), particularly on *Corynocarpus laevigata* and on *Melicytus ramiflorus*, both of these trees being endemic as to genus as well as to species; the former tree is mostly confined to the seashore, where it often forms dense and continuous thickets. In such situations it is generally of small size, but when standing apart it is of much larger dimensions, and not unfrequently in suitable spots it wears an imposing appearance from its large green and glossy persistent Laurel-like leaves. The latter tree is scattered plentifully throughout the country, and the foliage of both being evergreen, are eagerly browsed on by cattle.

"The only market for this fungus is China. From official information obtained from Hong Kong, we find that it is largely used by the Chinese in soups with farinaceous seeds, and also as a medicine, being highly esteemed. The Chinese have long been in the habit of using another species of this same genus that is indigenous in North China, and also of importing another species from other isles in the Pacific; so that the use of this kind of fungus as an article of food is not new with them. Who can say in this article of food Western pride may not again have to learn something more from this ancient, highly civilised, and much-injured people?

"At first, and for some time, our New Zealand fungus was only exported in small quantities. The demand, however, rapidly increasing, and the article plentiful and obtained at little cost, save the easy and untaught labour of gathering and drying it, its export rapidly increased. The drying of it, if collected damp, was an easy matter—merely spreading in the air and sun till dry, which soon takes place, when it is roughly packed in sacks, and if kept dry keeps good and sound for a very long time. The price paid to the collectors for it was originally small, only 1d. a pound; at this figure it remained for some time. It is now nominally 2½d. in some places, which sum, however, is often paid in barter.* It is said to be sold in the China shops at about 10d. or more retail. I am not aware of the actual price obtained by the exporter, but we find that its declared value at the Customs has ranged from £33 to nearly £53 per ton, which no doubt is much under the real value.

"During the last twelve years no less than 1858 tons of this fungus have been exported, valued at £79,752, as is more particularly shown in the following return, which I have compiled from sources published in the Government statistical papers:—

Years.	Quantity.		Declared Value.	
	Tons.	cwt.		
1872	58	0	£1,927	
1873	95	0	1,195	
1874	118	0	6,226	
1875	112	0	5,744	
1876	132	0	6,224	
1877	220	0	11,318	
1878	103	0	5,178	
1879	59	5	2,744	
1880	183	12	6,123	
1881	187	11	8,122	
1882	339	17	15,581	
1883	250	6	9,300	
	1858	11	£79,752	

"I should observe that the official entries show that those exports are confined to the northern island, and only from two ports there—viz., Auckland and Wellington, except some small lots amounting to seven tons, exported from Poverty Bay and Napier in the last two years, 1882 and 1883. The fungus, however, may have been extensively collected in the districts containing those two larger ports."

In order to test the value of the New Zealand fungus as an article of food a supply of it was recently obtained for Kew by Mr. Thomas Kirk, Chief Conservator of State Forests, Wellington, New Zealand.

A portion of this supply was submitted for analysis to Professor Church, F.R.S., who has been good enough to furnish the following interesting note:—

Hirneola polytricha.—A sample of this fungus, in the air-dried condition as received, was prepared for analysis by careful brushing and the removal of a few fragments of obviously foreign substances. It gave the following per-centages:—

Water	...	...	...	...	17.0
Albuminoids (calculated from total nitrogen)	...	...	...	...	6.8
Carbohydrates, digestible	...	...	...	...	70.5
Carbohydrates, indigestible	...	...	...	...	1.9
Fat (ether extract)	...	...	...	...	1.5
Ash...	...	...	...	...	2.3

A few remarks as to these figures will prove useful in appreciating

* I should, however, mention that in the spring of 1883 a large party of Maoris residing on the West Coast, near Mount Egmont, who had for some time been collecting and storing fungus there, sold the lot to an Auckland agent and general dealer, but took the whole total sum, upwards of £425, in hard cash.

the food value of this fungus. First of all the nitrogen present does not all exist in the form of albuminoids. The coagulable albuminoids, as estimated by the phenol method, amount to 5.4 per cent.; the remainder of the nitrogen occurring chiefly as amides, is not nutritive. If this result be accepted, the proportion of albuminoids to digestible carbohydrates plus the starch—equivalent of the fat, becomes 1:13.7 instead of 1:10.9, as shown by the percentages recorded above. Anyhow, this fungus is singularly poor in albuminoid or muscle-forming substances, and differs remarkably in this particular from the numerous edible fungi of which analyses have been previously made. In these analyses we find at least twice or thrice as much albuminoid matters, often more.

The substance or group of substances which I have called "digestible carbohydrates," contains neither starch, nor inulin, nor cellulose. Its chief constituent is a gum-like body apparently allied to bassorin, and well worthy of further examination. It swells up greatly in water and is soluble in dilute warm solutions of caustic alkalies. Its solutions gelatinise on cooling. I have observed what seems to be the same compound in other species of fungi, and it is probable that it has been described under several different names. The fungus now been discussed contains so large a proportion of this body that it presents a very convenient material for its isolation and the study of its composition and properties.

The ash of this fungus is rich in potash and phosphoric acid. Of the former constituent the ash contains no less than 42.02 per cent.; of the latter 20.02. These proportions are exceeded in the ash of other species; moreover, the ash in one hundred parts of this *Hirneola* is much lower than that recorded for other fungi.—A. H. CHURCH (in *Kew Bulletin for October, 1890*).

ASPHALT WALKS.

Your correspondent "C. O. S." (page 306) has described a cheap and simple method of making asphalt walks. I think there is nothing to equal them for kitchen gardens. They are clean and fit to walk upon in all weathers; no weeding nor weed-killer required. We have been laying down a little annually for several years, as materials accumulate and our limited assistance would allow. The following is our mode of procedure. The ashes from the horse are put through a half-inch sieve, and during the autumn and winter are stored in an open shed. The cinders are taken to the stokehole, with the result that the output of clinkers is largely increased. These, together with broken bottles, brickends, broken tiles or slates, in fact anything hard and of no other use, are put together in a mass, and as opportunity occurs are broken up rather small.

About the middle of April an old door is fixed on four posts driven into the ground, about 2 feet high, in the shed near the mass of dry ashes. When a wet day occurs from now till the middle of May the ashes are mixed on this door in the usual way with the tar as it comes from the gasworks, which costs about 1½d. per gallon. It is tossed into a conical mass, and if left, as it often is for days or weeks, is covered with old mats or sailcloth to keep the outside from drying too much. Additions are made to the heap from time to time till all is mixed. As the time for putting it down draws on the old gravel walks are simply roughed up a little with a pick, the clinkers—previously broken—laid on evenly, and rolled down to give an even surface to receive the ashes. The latter if it has laid in the mass for some time is apt to heat, and to a certain extent loses its moisture, and in this case it should be pulled out and some more tar poured on the top and turned once or twice, so as to get it all of one consistency. It is then laid on the walks in the way described by your correspondent, and similarly treated. I think it best to get a clean even surface by well rolling before applying anything to the surface, using a little water on the roller to keep the tar from sticking to it. We then give a liberal sprinkling of "Pea" brack, first passing a dry roller over it several times, afterwards using water on the roller to still further work the brack into the surface. This, I think, is still simpler and cheaper than "C. O. S.'s" plan, and we find that with simply the ashes from the house and tar a very good walk is made at the least possible expense, and mixing it on wet days during several weeks is a saving of time without disadvantage to the material.—R. I.



FRUIT FORCING.

PEACHES AND NECTARINES.—*Earliest Forced House.*—The trees are at rest and promise well, the buds not being too large. That is a good sign, as Peaches and Nectarines subjected to forcing year after year are liable to have the buds swelled to a large size, and these not unfrequently fall when they should be starting into growth. Some kinds are more prone to this defect than others. Noblesse stands at the head in liability to cast its buds, then comes Grosse Mignonne, and both these have a marked tendency to form double or triple fruit buds without a wood bud at the same joint, also to form buds with two or three pistils in embryo, in due course developing into twin or triplet fruit. This is what is meant by over-maturity of the buds, and is

common to all the large flowered varieties of Peach and Nectarine, which probably arises from a prolonged season of growth, with a decided tendency to over-production. The remedy, therefore, is to keep the trees as cool as possible after the fruit is gathered consistent with their safety, and remove the roof lights when the wood becomes sufficiently firm. Where this has been done the borders have got thoroughly moistened to the drainage, and when that is the case, and the buds are not over-matured, there is no fear of their falling. The trees should be pruned, dressed with an insecticide, and the whole of the house thoroughly cleansed. The trees also should be tied to the trellis, everything forwarded so that a start can be made without delay when the proper time arrives. The lights should remain off until the time of closing the house, or if the lights are fixed, which is a great mistake, as it causes the house to be subject to alternating fluctuations and depressions both of heat and moisture; the border inside must not lack moisture, and air must be given to the fullest possible extent. No amount of frost will injure properly matured wood, and the buds are never damaged by frost until they commence swelling.

Second Early House.—The trees have for the most part cast their foliage; the roof lights will have been off some time, or if kept over the trees longer than usual, as sometimes is necessary when the wood is strong to mature it properly, they must now be removed. The ventilating lights both top and bottom may remain, so that the unfixing and refixing of them is obviated, whilst the trees have complete exposure to atmospheric influences. The exposure has an invigorating tendency, it insures perfect rest, and the rains do much to free the trees of insects, besides soaking the borders. When the foliage is all down the necessary pruning, dressing with an insecticide, and cleansing the house should be proceeded with, removing the surface soil down to the roots, and supplying fresh material, but not covering the roots deeper than 2 or 3 inches. In the case of fixed roof lights watering may be necessary. Under no circumstances must the trees be allowed to become dry at the roots.

Midseason Houses.—The trees in these are just in the proper condition for lifting. It should be done with dispatch, all the materials being in readiness. Provide efficient drainage, shortening back any strong roots, and bringing any that are deep nearer the surface, employing the compost moderately firm. Good loam, rather strong, with an admixture of a sixth of old mortar rubbish, and a bushel each of bone meal and charcoal dust to every cartload of loam, will grow Peaches and Nectarines perfectly. If the soil be light add a fourth of clayey marl, and if very strong a similar quantity of road scrapings; avoid manure, except at the surface; give a good watering, and the trees will soon get established in the fresh compost. Trees judiciously treated at the roots whilst they have foliage seldom fail to set and stone the fruit satisfactorily. Borders that have the soil a soapy mass, and it is not possible to remove it, may have a good dressing of quicklime (an inch thick is not too much), mixing it with the surface soil as deeply as the roots allow without much disturbance. Nothing, however, is so effectual as lifting and renovating the border.

Latest Houses.—Except from the latest varieties the fruit is all gathered. Trees from which it has been gathered should have the bearing wood of the current year cut out, leaving no more wood of the current year's production than is required for filling vacant space and affording fruit next year. The foliage should be thoroughly cleansed of dust or insect pests by a few good washings from the syringe or garden engine. After that the trees will not require syringing, dryness with thorough exposure of the wood to light and air being essential to the perfecting of the wood and buds. Where this is not effected the house may be kept rather close by day, so as to secure a good heat, there being of course enough to ensure a free circulation of air, and the house should be fully ventilated at night. Any trees that have too gross wood should have a trench taken out as deep as the roots, and about one-third the distance from the stem the trees cover of trellis, leaving it open a fortnight, then filling again firmly.

CUCUMBERS.—Place out the latest plants which are to afford a supply of fruit about the new year on ridges or hillocks, training with a single stem to the trellis, up which they may be allowed to advance about two-thirds, when the lead may be pinched. Those not having the convenience of a Cucumber house may secure fair supplies of winter fruit by growing the plants in pots or boxes, training the plants near the glass over pathways in stoves, fruiting Pine houses, or other heated structures. Plants in bearing should not be overcropped, or the fruit allowed to remain longer than it is fit to cut, removing all deformed fruit in a young state. Maintain a night temperature of 70°, 5° less in the morning, 75° by day, up to 85° with sun, admitting a little air at the top of the house at every favourable opportunity. The evaporation troughs should be charged with liquid manure, and the floor damped about 8 A.M. and 4 P.M., dispensing with the syringe. Reduce the supply of water at the roots, but not so much as to cause flagging. A few horse droppings sprinkled on the beds occasionally will benefit the plants through the waterings and the ammonia given off. Keep the foliage thin and the glass clean, so as to secure thoroughly solidified growth.

KITCHEN GARDEN.

EARTHING UP CELERY.—Some gardeners earth their Celery as fast as it grows. Others do not earth it until it is of full size, or nearly so. The former is the better way with Celery that is required for immediate use; the latter the more suitable for Celery that has to be kept for a long time, as when it is not earthed until full sized the stems are much harder than when they are covered and blanched from the first. It is now, however, time that all Celery should be earthed. If severe weather

occurs the non-covered heads would suffer severely in having no soil to protect them. Celery for early winter use that has been previously earthed should now have final attention. That which has not been done yet must have the loose short side leaves cleared off, and the main ones tied together in a firm bunch. This will prevent the soil falling into the centre. The soil must be placed well round each plant, and pressed down firmly. When finished, the ridge should slope sharply from the top to the bottom, as this assists in throwing off the rain and preserves the Celery; untie each plant after earthing, and do not break the main leaves in handling them.

STORING BEETROOT.—Beetroot is somewhat easily injured by frost. It will not keep well into next spring or summer if the frost touches it before being stored. It is therefore important that it should be stored before any severe frost occurs, and it is not quite safe to leave it out in many parts until November. Take it up and store it at once. In stiff soil it may be necessary to lift each root with a fork, but the root must not be broken at any time. Do not trim any of the rootlets off, and cut the leaves about 3 inches from the crown, as if the juice escapes from the main root its value will be greatly reduced. Place them in an open shed for a day or two until the soil adhering to them has dried, then store them in their winter quarters where there is no artificial heat or dry air. Sheds or cellars are suitable places, and each layer of roots, when formed into a heap, must be covered with a quantity of sand or fine ashes. These are placed on to keep the roots plump and fresh.

ASPARAGUS.—In many cases, as soon as the owners of an Asparagus bed see the heads becoming withered in appearance, they conclude they are of no further use to the root, and cut them off. This is a mistake, as the stems are not ready for cutting down until they have become quite withered, and this will not be until the middle of November, or later. Weeds that obstruct the light from the crown of the plants should be removed, as, unless the young growths that are now formed are fully matured, the produce will be poor.

TOMATOES.—The season for these is virtually over, and so far as open air crops are concerned it has not been a successful year. We have gathered many ripe fruits from our plants trained against the kitchen garden wall, but nothing like a full return. There are, however, many green fruits on them still, and many will be in this state throughout the country. Few will ripen now if left on the plants, but should frost occur the green ones may be blackened by it. This causes them to become soft, and then they will not ripen but decay. To avoid this and save the crops in good condition all open-air fruits should be cut off now with the stems attached and tied in bunches of from six to a dozen, and suspended in a dry airy room to ripen. If the fruit is wanted soon they may be hung in a warm place, but if not until well into November or December a cool place will suit it best. All plants from which the fruit is cut should be thrown away.

MUSHROOMS.—If woodlice or any insects are plentiful on beds that will come into bearing soon, pour boiling water round the bed, but do not allow any of it to fall on the centre. They can be destroyed with less injury to the bed now than when the Mushrooms are plentiful. If the heat has declined in any beds below 70°, cover the surface with a layer of hay to the depth of 9 inches. If the surface of the bed is rather dry, water it with water at 80° before putting on the hay, but we do not approve of watering beds very much before the crop appears, and prefer to keep the surface of the bed in a moist condition by making the atmosphere of the place in which the beds are humid. Collect more materials for more beds, and form these as fast as one, two, or three cartloads can be secured. Beds made up now will bear at Christmas and in January, times when the crops are greatly valued.

LEeks.—Those intended for use during the winter should have several inches of soil put up round their stems. This will blanch them, and make them good for use. Those intended for spring should not be earthen up until after the new year. Very large Leeks never keep well, and the huge specimens should be used first.

PLANT HOUSES.

Adiantum cuneatum.—Plants from which all the fronds have been removed that are suitable for cutting should have all small fronds about the crowns of the plants cut clean away. Remove all loose soil from the surface of the plants, and dust them with soot if slugs have been troublesome. Keep the plants rather dry, and in a temperature 5° lower than that in which they have been grown. After a few weeks' rest the plants will start again freely into growth if introduced into heat. Expose all plants to the sun that are well furnished with fronds to harden them, so that they will stand well after they are cut. Admit air daily, and be careful that no water is allowed to settle upon the fronds. Repot young plants that would otherwise become root-bound before the close of the year. They will soon become established, and continue through the winter and spring to yield suitable fronds for cutting when they begin to be scarce on old established plants. Good fronds are generally scarce during February and March, but young plants placed into 4 and 5-inch pots now will continue growing slowly and push up large fronds during those months. Pot these in equal proportions of loam and leaf mould, with the addition of sand. If kept in a temperature of 60° the roots will soon take possession of the new soil.

Small Ferns.—Those growing in small pots may be placed into larger sizes as they need more root room. These plants in the temperature advised for *Adiantums* will continue to grow throughout the autumn and winter, and early in spring will be suitable for decoration. Repot those that are growing in boxes and pans as they become large

enough. Nothing is gained, but the reverse, by allowing them to become crowded before they are placed singly into small pots. Small Ferns are always useful, and a good stock in various stages should be kept on hand. Pterises and other greenhouse Ferns are amongst the most useful, as they can be employed effectively in large conservatories in many positions where flowering plants fail to do satisfactorily.

Hardy Ferns.—Many of the choice forms of *Athyriums*, *Polystichums*, and others are invaluable for decoration in a young state. Many of these in gentle warmth will continue growing throughout the winter. Even plants that have been grown in cool structures soon start again into growth when placed in heat; the old fronds can be removed as the new ones display signs of pushing up. Hardy varieties are not half so much used for decoration as they deserve to be; they can be had in positions where it is scarcely safe to place tender Ferns, and when they are shabby, after being employed in rooms for some time, are quickly restored again to health and beauty. Seedlings or young Ferns raised by various means may be subjected to the same temperature and treatment as Pterises and other greenhouse Ferns.

Foliage Begonias.—These are not to be despised for conservatory decoration during the autumn and winter months, in fact the better varieties when associated with Ferns at any season of the year are very effective. In positions where flowering plants fail to do well these Begonias are doubly useful. Young plants recently rooted may be placed into 4-inch pots, and in a very short time, if kept in gentle heat, they will be ready for the conservatory.

Ficus elastica.—Young plants that have been raised from eyes and cuttings, and are in a backward condition, should be pushed on in heat; they will continue to grow in a temperature of 60°. If potted moderately firm and exposed to light they will grow into sturdy specimens. The growth of young plants is very slow when subjected entirely to greenhouse treatment. Young plants that have recently been raised from cuttings in small pots, and are well rooted, may be placed into 4-inch pots in a compost of loam, sand, and one-seventh of manure.

Epiphyllums.—Plants that have thoroughly ripened their growth and are showing their flower buds may be arranged with *Adiantums*. In no position when elevated above these plants are the beautiful flowers of the *Epiphyllum* shown to greater advantage. It is not wise to arrange all the plants in this position where flowering plants are needed in succession. Keep all those that have completed their growth and are not showing flowers perfectly cool, but fully exposed to the sun. Water them carefully, and if worked do not allow them to suffer by an insufficient supply at their roots. It is a mistake to keep them dry until they shrivel.

Palms.—Young plants that need more root room should be potted. It is a mistake to keep them too confined at their roots where the object is to grow them on into larger plants. It is much better to turn out any plants that are in an unsuitable condition at their roots and repot them than to leave them in this state throughout the winter. Do not give these plants large pots, for the soil is liable to become sour before the roots take possession of it, and this must be avoided if the plants are to grow freely and retain a healthy appearance. Be careful not to overwater *Cocos Weddelliana*, and keep the plants in a temperature a few degrees warmer than the general stock. This Palm does best in peat and sand, while the stronger growing kinds do well in loam and sand. Where good leaf mould can be had direct from the woods of Oak or Beech equal portions of loam and leaf mould may be used with the addition of sand.



APIARIAN NOTES.

COLONIES HAVING YOUNG QUEENS SWARMING.

As many bee-keepers have experienced during this tantalising, abnormal, and exceptional season, bees have sometimes acted contrary to the general rule. According to instructions given in these pages some have fed swarms having young queens, but contrary to expectations these swarmed during July in the same manner and proportion as the prime swarms, which was puzzling, and created an opinion that our advice was not sound. The case was as follows. They knew the consequences that were certain to occur subsequent to feeding swarms having queens that had already laid their full number of eggs for the season. Relying upon our advice they fed prime swarms sparingly, but fed after swarms freely, with the result that they swarmed too, which appeared to stultify what had been said. The error was with the bee-keepers themselves, who failed to carry out the whole of the instructions, placing the bees into too small hives, and failing to increase the size of them as the bees increased in numbers.

Young queens are most prolific at their earliest stage of existence after fertilisation, and it is not correct, as was stated by an apiarian in a contemporary—"That queens had to be a few months

old before they became prolific." My nuclei at present have more bees than any of my unswarmed stocks, and such stocks never fail to give the greatest satisfaction provided care be taken to prevent an excess of drone comb.

PUNIC BEES.

These are still active and are giving satisfaction as good workers. I can detect no difference in the quality of their honey, but can in their combs. They are completely and compactly filled and sealed, and should this be a permanent feature in their habits, will add to their value.

BEES FROM IMPORTED QUEENS.

Some have been sent me by "A Hallamshire Bee-keeper," and appear very attractive bees; they were lively and of a rich dark plum colour, and while they seem quiet to their owners are determined in keeping robbers from their hives. I liberated two in the presence of several bee-keeping gentlemen in a restaurant in Glasgow. A bee was caught by each person and placed beneath a glass, when instantly the bees pounced at each other, and quick as thought one stung the other to death much in the same manner as queens do. This is also a lesson worth remembering when introducing queens and joining bees from two different stocks. The old method of sprinkling two lots of bees with peameal is a good plan, and quiets the bees, but if the day is chilly the practice is bad, as the bees may be chilled before their toilet is completed. Feeding the two lots of bees with one honey and locating them on frames from one hive, caging the queen to be preserved, and leaving both queenless for a time, is a certain and safe plan. If two lots are gorged with honey they may be shaken together quickly, and this is a speedy and safe method. When any odour can be conveyed to any bee that also has a good effect, but often some of the bees do not catch the odour, hence fighting begins, and in many cases continues, and not unfrequently the queen is killed or maimed. The great object of the bee-keeper is to prevent robbing or fighting, or exciting the bees in any way.

MAIMED QUEENS.

Maimed or mutilated queens seldom survive the spring, or if they do so are rarely prolific enough to be profitable. The same may be said of those that have been exposed to extreme cold and dampness. The latter and exhausted queens are those that leave their hives in spring, termed "hunger swarms."

QUEENLESS HIVES.

I predicted some months since that there would be a large percentage of queenless hives or hives having unfertile queens, and this is now being verified. In several apiaries fifty per cent. of the hives are either queenless or having unfertilised queens, and in every case where queens were older than one year the loss is greatest. Bee-keepers should make sure before it is too late that the queens are all healthy, and likely to continue laying until next May or June. After that young queens should supersede every old one, and no stimulative feeding should be given to queens of an older date than those of 1890. Leave all such until next season.

STIMULATIVE FEEDING.

The supposition that dribble feeding is effectual in forwarding bees is a delusion. In an apiary situated but a few yards from my own where dribble feeding was carried on all the summer, the bees do little more yet than half fill the body of the hive, while those in my own apiary having plenty of stores are strong.

MOVING HIVES.

Modern bee-keepers are beginning to discover that the old system of moving bees from one place to another, as the flora of the district invites, is more profitable than keeping the bees pent up in the home garden the whole year. They are also finding that the hives commonly in use are ill-adapted for the requirements of the bee-keeper, and are too unwieldy for moving about from one place to another to be easily managed or profitable.

THE STANDARD HIVE.

This has already lost favour because of the introduction of two sizes of frames for one hive, necessitated through the discovery

that the so-called standard hive was too small for bee husbandry, a mistake every practical bee-keeper saw from the first. Then the make of the hive disallows bees to be moved about with profit, and the double casing, which prevents the thorough evaporation of the moisture from the interior of the hive, hastens decay, and is inimical in every respect to the well-being of the bees and production of honey.

OUTSIDE CASES.

These are far superior to double cased hives, but they have a grave fault—viz., when the hive is removed the cases stand in the way as so much lumber, whereas the wrappings with outer oilcloths accompany the hive at all times, and they may be taken to every place; while, when at home, the curved sheet of galvanised iron as a roof and porch, are a thorough protection from external moisture, and no annual painting is required, as is the case with double cases, or outside cases. It is not because I despise neatness and attractiveness in the apiary that I discourage these things, but because it is neither economical nor justifiable to carry out a system prejudicial to the bee and unprofitable to the bee-keeper. The style of bee-hive architecture has been carried beyond the limits of usefulness, and entirely at variance to the requirements of the bees and their owners. The successes of so many of our pupils this year, while those near them working upon a different system with not a pound of surplus honey, will perhaps convince them that the loss in a good season will be in proportion to the present year's success and non-success of the two methods.—A LANARKSHIRE BEE-KEEPER.



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

China Roses (T. F. W.).—We received a box half full of petals, not one bloom. This was in consequence of no suitable packing being used, such as damp moss, or green grass, or leaves. The Rose is either Cramoisie Supérieure or Fabvier, we cannot tell which; but you cannot err in planting both these most richly coloured of all China Roses.

Raspberries Unsatisfactory (F. J.).—In some soils Raspberries do not thrive, those which are very strong, cold, and wet, and others which are thin and dry being alike unsuitable. Even in good soils some persons have found it difficult to establish productive Raspberry plantations, mainly through a mistake made at the outset in not shortening the canes to within a foot or less of the ground when planting, or shortly afterwards, before they make their first season's growth. Long canes with few roots are planted, and the canes left their entire length, or nearly so, for fruiting. They may produce a few fruits, but this exhausts the plants so much that the roots become almost paralysed, and the suckers few and weak. This check at the outset often affects the plants for years. You will find the right method of procedure figured in the Fruiterers' Company's prize essay on "Profitable Fruit Growing," the second edition of which is now being issued from this office, 1s. 3d., post free. Carter's Prolific is a free and sturdy grower and scores of acres of it may be seen in the fields in Kent as fully exposed to the sun as your garden can be, but all the same, Raspberries grow well in partial shade. Rivers' Hornet, Superlative, Baumforth Seedling, and Prince of Wales are taller growers. It is not a good plan to dig deeply among Raspberries, but strong soils especially should be pointed over. Partially decayed manure and vegetable refuse are good for spreading on the surface when the plantations are put in order, and should be left to decay. Not knowing the nature of the soil of your garden, we cannot give a more definite reply.

Cellini Apple (Idem).—This is classed as a culinary Apple in the essay above referred to, also by Dr. Hogg in the "Fruit Manual," where it is described as of the "first quality." Many persons consider the quality good enough to entitle it to rank as a dessert variety. It is, like the Blenheim Pippin, used both for culinary and dessert purposes, and therefore exhibited in both culinary and dessert classes. Unfortunately the trees are liable to canker, and though they bear early and freely they seldom remain healthy and productive for many years.

Grape Wine (J. B.).—A very good wine can be made from Grapes

which do not attain their perfect maturity in the open air in this country. The fruit should be allowed to hang as long as it is likely to derive any benefit in the way of ripening, and when it is ready the bunches are to be gathered and laid carefully, so as not to bruise the berries. The berries are to be picked separately from the stalks, discarding all that are in any way decayed. Measure the fruit as it is put into the fermenting tub, and to every fifteen gallons of fruit add one gallon of soft water. Stir and bruise the fruit, and after standing for twenty-four hours, strain and press the fruit through a hair cloth or coarse canvas bag subjected to pressure. Now test the liquor by the saccharometer and bring up the gravity to 120 by the addition of sugar, every pound of sugar raising the density 35 or 36. Let the whole be well stirred, and add one ounce of argol to every three gallons of must. Stir the must every day, morning and evening, and when the density falls to 80, and the fermentation becomes languid, the cask is to be bunged up and the wine bottled off in the month of March following. Argol can be had from chemists, and perhaps a saccharometer too, or from Messrs. Cetti, Glass Merchants, Lambeth.

Injured Cyclamens (P. C.).—The grubs you send are the larvæ of the destructive weevil, *Otiorhynchus sulcatus*, a brownish black beetle-like creature, which eats Vines, Roses, Ferns, and most other plants, feeding at night and hiding in the soil and other obscure places in the daytime. The insects should be sought in spring with the aid of a light, and as many as possible caught and destroyed. They deposit eggs just within the surface of the soil in pots and borders, and the maggots resulting devour almost any kind of roots with which they come in contact. They are very difficult to destroy. You might make a few experiments with some with different insecticides, such as Lemon oil, Fir-tree oil, and petroleum solutions, of a strength that could be safely applied to the roots of plants. In the case of your Cyclamens, however, we suspect the only effective means of dealing with them will be to shake all the soil from them, well wash the corms and roots with a safe insecticide, apply bruised charcoal to the eaten parts, and repot in fresh soil free from the maggots. If there is the slightest suspicion of any being in the new compost, it should be baked sufficiently to destroy all grub life, then made properly moist before using. The heating to which the soil is subjected will not impair it, but, on the contrary, increase its fertility.

Plum Trees not Bearing (W. E.).—Many Plum trees produce blossom, but from various causes fail to bear fruit. Your trees, we presume, produce no blossom. They may have grown too luxuriantly and not ripened the wood sufficiently for blossom formation. It is not improbable, also, that you have been too free with the use of the knife, for the more some Plum trees are cut the less they bear. You do not indicate the form of the trees. If they are standards or bushes the pruning should be practically limited to thinning, not cutting back to spurs; if trained to walls or as espaliers the summer growths from the main branches should be pinched in June and subsequently, not allowed to grow until the autumn. It is evident, also, that the root action is too powerful, and if you dig a deep trench 3 feet from the stems, and undermine the trees, you will most likely find some strong roots striking down more or less vertically, and if so sever them, fill in the soil again with some mortar rubbish and wood ashes intermixed, and press it under and round the roots firmly. Do not dig the ground near the stems, but scrape some of the old soil away and add vegetable refuse for inciting a mass of fibrous roots near the surface, and the growths of the trees will then be more sturdy and fruitful in character.

Pruning Fruit Trees (St. Julien).—We are obliged by your letter and sketches and now understand the case. You state in your letter that we were wrong in our supposition on a former occasion. We ought not to be compelled to base replies on supposition, but inquirers should make clear each case on which information is desired. We were certainly not wrong in the principle embodied in our reply. If a bud dies through any cause, obviously it cannot grow, but if sound and good it will push the more strongly the more the stem is cut back. We are not satisfied now that the leader of your espalier was cut back low enough for insuring two side growths and a leader. You appear to have cut it to the wire, whereas, if your sketch is right, the leader was previously cut considerably below the wires. If one or two shoots push strongly near the top of a cut back leader the growths are apt to draw the sap from the buds below, and these remain dormant. We have no doubt, the tree being healthy, if the leader were cut back into the two-year-old wood, that fresh growth would issue, but we do not perceive the necessity for doing so, for if you cut back both the leader and the side branch to good buds on sound wood close to the wire, growths may be expected to push in the spring, one of which can be chosen for training to the right, the other to the left, and the third to extend, if you have other wires to furnish, if not, only two shoots are needed, and all others should be suppressed. We are now alluding to the tree represented in the larger sketch. If a shoot push very strongly from one side, and weakly from the other, pinch the strong when it has made four or five leaves, and make it start again, as it will, and give the weak a chance to extend. If more than one shoot push after pinching, reserve the most promising for extension, pinching the others as soon as they make three small leaves, also any after growths that issue to one leaf. When a branch on one side of a tree is not strong enough, while another on the opposite side is too strong, elevate the weak and depress the strong, more or less according to the disparity between them, and their strength will become more equalised. Now we turn to the small sketch. What you describe as the leader is correct, and as all the wires are furnished, it ought not to have been allowed to extend. Cut it out

at once close to the top horizontal branch, and permit no more vertical growths from the top of the tree. In respect to oblique cordon trees we say that, as a rule, more is lost than gained by shortening the leaders; but there are exceptions to every rule. For instance, a leader may be obviously unripe to the tip, or may terminate in a fruit bud, in which cases cutting back to a good wood bud is essential for the prolongation of healthy growth. This must be left to individual judgment. From oblique cordon trees planted two years ago fruit was exhibited at the late Guildhall Show, won a prize in great competition, and a dish was chosen from the collection and sent, with other superior examples, to the Queen. The same advice we gave in the management of the trees in question we have given to you, and now we hope have adduced proof that it was not very erroneous.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*Dianthus*).—A, Dumelow's Seedling; B, Beauty of Kent; C, Mère de Ménage; 13, Hollandbury; the others not known. (*Exe*).—1, not known; 2, Fearn's Pippin; 3, Winter Greening; 4, Small Mère de Ménage; 5, Golden Winter Pearmain; 6, Fondante d'Automne. (*C. W. T.*).—1, Royal Russet; 2, Blenheim; 3, Golden Russet; 4, Hornead Pearmain; 5, Court Pendu Plât; 6, not known. (*G. Sims*).—1, Blenheim Pippin; 2, Colonel Vaughan; 3, Duchesse d'Angoulême. (*W. S., Frome*).—1, Flanders Pippin; 2, Hawthornden; 3, Stubbard; 4 and 5, probably local varieties. The Apple sent subsequently is Bess Pool, true and good. (*George Fairbairn*).—We think your seedling very promising, and worth sending a little later, say to the December meeting of the Royal Horticultural Society. (*R. C. Kingston*).—3, Court Pendu Plât; 4, Cox's Pomona; 5, Round Winter Nonesuch; 6, Dutch Mignonne; 7, Sykehouse Russet; 9, Cockle's Pippin. (*J. P.*).—Beurré Hardy.

COVENT GARDEN MARKET.—OCTOBER 15TH.

MARKET still very quiet, with supplies more than equal to the demand.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, $\frac{1}{2}$ sieve	2	6	to	6	0	Lemons, case	35	0	to 45 0
" Nova Scotia and						Melons, each	1	0	2 0
Canada, per barrel	0	0	0	0		Oranges, per 100 ..	4	0	9 0
" Tasmanian, p. case	0	0	0	0		Peaches, dozen	3	0	12 0
Grapes, per lb.	0	9	3	0		Plums, $\frac{1}{2}$ sieve	4	0	9 0
Kentish Filberts, 100 lbs.	0	0	50	0		St. Michael Pines, each..	2	0	6 0
" Cobs	50	0	60	0		Strawberries, per lb.	0	0	0 0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes, dozen ..	0	0	to	0	0	Mushrooms, punnet ..	1	6	to 2 0
Asparagus, bundle ..	0	0	0	0		Mustard & Cress, punnet	0	2	0 0
Beans, Kidney, per lb.	0	3	0	0		Onions, bnshel.	3	0	4 0
Beet, Red, dozen	1	0	0	0		Parsley, dozen bunches	2	0	3 0
Brussels Sprouts, $\frac{1}{2}$ sieve	0	0	0	0		Parsnips, dozen	1	0	0 0
Cabbage, dozen	1	6	0	0		Potatoes, per cwt. ..	3	0	4 0
Carrots, bunch	0	4	0	0		" New, per lb.	0	0	0 0
Cauliflowers, dozen ..	2	0	4	0		Rhubarb, bundle	0	2	0 0
Celery, bundle	1	0	1	3		Salsafy, bundle	1	0	1 6
Coleworts, doz. bunches	2	0	4	0		Scorzonera, bundle ..	1	6	0 0
Cucumbers, doz.	2	0	3	6		Seakale, per bkt. ..	0	0	0 0
Endive, dozen	1	0	0	0		Shallots, per lb.	0	3	0 0
Herbs, bunch	0	2	0	0		Spinach, bushel	1	0	2 0
Leeks, bunch	0	2	0	0		Tomatoes, per lb. ..	0	6	0 8
Lettuce, dozen	0	9	1	3		Turnips, bunch	0	0	0 4

CUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	4	0	to	6	0	Marguerites, 12 bunches	2	0	to 6 0
Asters, per bunch, French	1	0	1	6		Maidenhair Fern, dozen			
" English, 12 bnchs.	4	0	9	0		bunches	4	0	9 0
Bouvardias, bunch	0	6	1	0		Mignonette, 12 bunches..	1	0	3 0
Carnations, 12 bunches ..	6	0	9	0		Pansies, dozen bunches ..	1	0	2 0
" 12 blooms	1	0	2	0		Pelargoniums, 12 trnses	0	9	1 0
Chrysanthemum, 12 blms.	1	0	3	0		" scarlet, 12 bnchs	3	0	6 0
" 12 bunches	4	0	12	0		Pinks (various), doz. behs.	6	0	9 0
Cornflower, doz. bunches	0	0	0	0		Primula (double) 12 sprays	0	6	1 0
Dahlias, dozen bunches ..	2	0	4	0		Roses (indoor), dozen ..	0	6	1 6
Eucharis, dozen	2	0	4	0		" Red (Eng.), 12 beh.	2	0	6 0
Forget-me-not, doz. bnch.	1	6	4	0		" Red, 12 blooms ..	1	0	2 0
Gardenias, 12 blooms ..	2	0	4	0		" Tea, white, dozen ..	0	6	2 0
Gladiolus, 12 bunches ..	6	0	12	0		" Yellow	2	0	4 0
Gypsophila, per bunch ..	0	0	0	0		Stocks, dozen bunches ..	0	0	0 0
Lapageria, 12 blooms ..	2	0	4	0		Sweet Peas, 12 bunches	0	0	0 0
Lavender, dozen bunches	0	0	0	0		Tuberose, 12 blooms ..	0	3	0 9
Lilac (French) per bunch	5	0	6	0		Violets (Parme)	2	6	3 6
Lilium, various, 12 blms.	1	0	2	0		" (dark)	1	0	2 0
" longiflorum, 12 blms.	4	0	6	0		" (English), doz. bnch	1	0	2 0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Aralia Sieboldi, dozen ..	6	0	to	12	0	Geraniums Scarlet, p. doz.	2	0	to 6 0
Arbor Vitæ (golden) doz.	6	0	8	0		Heliotrope, per doz. ..	4	0	6 0
Asters, dozen pots	6	0	9	0		Hydrangea, doz. pots ..	9	0	18 0
Calceolaria, per doz. ..	0	0	0	0		Lilium lancifolium, doz.	9	0	18 0
Chrysanthemum, per doz.	6	0	24	0		" longiflorum, doz.	0	0	0 0
Climbing Plants, various,						Lily of the Valley, 12 pots	0	0	0 0
dozen pots	4	0	9	0		Lobelia, per doz.	0	0	0 0
Dracæna terminalis, doz. 24	0	42	0			Marguerite Daisy, dozen	6	0	12 0
" viridis, dozen	12	0	24	0		Mignonette, per dozen ..	4	0	6 0
Erica, Cavendishi, per pt.	0	0	0	0		Musk, per dozen	0	0	0 0
" various, dozen	12	0	18	0		Myrtles, dozen	6	0	12 0
Euonymus, var., dozen ..	6	0	18	0		Nasturtiums, dozen pots	0	0	0 0
Evergreens, in var., dozen	6	0	24	0		Palms, in var., each ..	2	6	21 0
Ferns, in variety, dozen..	4	0	18	0		Pelargoniums, per doz. ..	6	0	12 0
Fiens elastica, each	1	6	7	0		Rhodanthe, per dozen ..	0	0	0 0
Foliage plants, var., each	2	0	10	0		Stocks, per doz.	0	0	0 0
Fuchsia, per doz.	4	0	9	0		Tropæolums, various, per			
Geraniums, Ivy, per doz.	0	0	0	0		dozen	0	0	0 0



DAIRY AND FRUIT FARMING.

Two Shows were held in London last week ; a Dairy Show at the Agricultural Hall and a Fruit Show at the Guildhall, both of them being ostensibly in the interest of farmers, though it must be owned if farmers do ultimately derive benefit from the fruit Show they will be greatly indebted to gardeners for such a lesson in fruit culture as they never had before. We saw both Shows, and may, we think, usefully record our impressions now, for both of them taught lessons of weight and moment which should tend to promote that progressive improvement which is steadily bringing prosperity to agriculture once more.

Taken as a whole, the thousands of plates of fruit were absolutely bewildering, but a mere glance at any part of the marvellous Exhibition was sufficient to convince one of the high degree of excellence to which fruit culture has been brought in this country. In more than one report of the Show in the daily papers exception has been taken to it as a gardeners' exhibition after all, as having missed its aim of promoting fruit farming, its tendency to show what skilful fruit cultivators gardeners are, and how unskilful are farmers and cottagers. But that is precisely the point of the whole thing. If the Show taught one thing more emphatically than another it assuredly was the high importance of careful selection and skilful cultivation. It has long been notorious how very much farmers have been wanting in both things, and they have now been told in no uncertain manner that the careful cultivation of the best sorts—especially of Apples—tends to insure a supply of really first-class fruit even in a season so remarkable for the scarcity of Apples as the present one is.

Readers of the Journal were told long ago of the process of cultivation applied to the Barham Court orchards, and the gold medal, won so easily by the magnificent fruit shown by Mr. Woodward last week, affords proof of its soundness. To farmers who intend planting more fruit trees this season we say then, See that the stations are thoroughly well done for orchard trees, that the whole of the land is trenched for plantations, that full attention is given to the drainage and fertility of the soil, and that the planting is well done, and the trees made fast to stakes or other supports at once. Do not forget the importance of shelter, and if you plant an orchard in an exposed place plant belts of fast-growing trees around it at the same time—not a mere line or hedgerow, but a belt of several rows, which will form an efficient barrier against cold north-easterly winds by the time the trees come into bearing, and also screen the trees from violent south-western gales when they are laden with fruit. It is these two cross winds that so frequently prove fatal to the fruit crops, and we must guard against them if we would succeed. One word more before we turn to the Dairy Show, and that word is an expression of our pleasure at seeing Mr. Wright's prize essay on fruit culture being sold at the Show. That certainly was like the application of a sermon, for there was the marvellous fruit, and there also was the manual which tells so clearly what to grow and how to grow it.

Pleased as we were with the Fruit Show, we must own to a feeling of being crowded out by the eager throng by which every coign of vantage was taken up. It was not so at the Dairy Show, for there was ample space to enjoy fully the full and very excellent display. The various breeds of dairy cows were well represented, forming a show indeed in themselves, and the show of dairy produce and appliances was equally attractive. There could be no doubt about the earnestness of farmers here, and there certainly were many instructive sights, of which none afforded more striking evidence of progress than the cream separators. There was the milk fresh from the cow poured in at the top, and a steady stream of cream flowing out below on one side, and the milk from which it

was extracted on the other. This useful implement is a fine example of the combination of practice with science ; its inventor has simply turned his knowledge of the laws which govern centrifugal force to account, and here is the result. Inventors must be paid, but we wish so useful an appliance could be placed on the market at a price which every dairy farmer could afford, for then a hundred separators would be sold for every one now ordered.

Bacon, cheese, and butter were all attractive features, especially the latter, which was so good in texture, colour, and flavour that the judging could not have been an easy task. What are termed fancy butters were striking examples of elegant design and skilful manipulation. Maréchal Niel Roses in butter were so skilfully arranged with suitable foliage as to present a wonderfully close resemblance to natural flowers, the rosebuds and petals of full blown Roses being correct in every line and curve.

There was an important discussion on the second day of the Show on railway rates for dairy produce, and copies of a paper read by Mr. George Barham were ordered to be sent to the Board of Agriculture and every Chamber of Agriculture in the kingdom.

WORK ON THE HOME FARM.

As autumn draws on live stock require especial care. If calves have been let out on pasture they should now be housed entirely for winter in any convenient building that is well ventilated by roof ventilation. Many an old barn is turned to account for sheltering live stock, and such buildings answer well enough if only the walls are sound, but many an old barn have we seen with its boarded sides so broken and time-worn that the interior of the building was draughty and cold. Now, we do not approve of a close warm atmosphere in buildings for cattle at any time, but when warmth and shelter for them is mentioned, it points to thorough protection from cold wind and rain such as a sound building affords. This forms the basis of successful winter management, and with it there must be perfect cleanliness, pure food, water, and air, and a clearance of all filth twice daily. Let the dietary be abundant without waste, clear out rack and manger after every meal ; keep on the calf flesh by all means, at the same time avoid a plethoric habit and its attendant risk. Our aim should be the happy mean between poverty of condition and the other extreme of over-feeding.

We have had only an occasional wet day, and the weather continues most favourable for work on the land. Wheat sowing has been such an easy matter that it and all winter corn sowing ought to be finished early. Foul land has been ploughed and harrowed repeatedly, and it has been possible to burn twitch and other rubbish as it is collected. With harvest over long ago, corn sowing done, foul land cleaned, abundance of feed still on pastures, and root crops improved wonderfully during the last six weeks, the situation is certainly not an unpleasant one for farmers south of the Trent, but they have their grievance in the low price of stock just now. Other farmers have much greater reason to complain. Here is an extract from a letter written on the 6th inst., after a journey due south. "It was raining heavily all last week in Caithness. All the north of Scotland has had a lot of rain lately. As we came along in the train the floods we saw in the valleys were fearful ; all the cornfields were under water, much corn that had been cut was swept away by the floods ; the hay, too, which is not yet all carted, is covered with water."

While the land is so dry and firm all roots intended to be stored in heaps should be cleared off the land, as useful growth is now pretty well done, and the ploughing should be done early, in order that the soil may derive full benefit from exposure to winter weather.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N. ; Long. 0° 8' 0" W. ; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain
1890. October.		Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min.	In sun.	On grass		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Sunday	5	30.211	58.2	55.3	S.W.	55.9	65.9	50.7	93.2	46.6	0.017	
Monday	6	30.083	58.7	55.5	W.	56.4	66.3	53.3	102.9	49.0	0.061	
Tuesday	7	33.061	57.6	56.8	S.	56.9	61.9	56.1	72.1	53.3	0.230	
Wednesday	8	30.351	51.8	48.5	N.E.	54.2	62.2	44.9	101.9	40.6	—	
Thursday	9	30.490	44.1	44.1	Cal'm.	54.2	59.3	37.8	85.3	33.1	—	
Friday	10	30.386	44.4	43.2	S.W.	52.2	62.9	37.1	94.2	33.9	—	
Saturday	11	30.380	46.8	45.7	N.E.	51.9	66.2	42.1	97.1	33.7	—	
		30.231	51.6	49.9		54.8	63.5	43.0	93.1	42.2	0.338	

REMARKS.

- 5th.—Bright sunshine from about 11 A.M. to 3 P.M. ; the rest of the day cloudy.
 6th.—A little rain from 2 to 3 A.M. ; generally bright from sunrise to 1 P.M. ; cloudy afternoon.
 7th.—Wet from 8 A.M. to 2 P.M. ; overcast afternoon, and wet again in evening.
 8th.—Bright sunshine throughout.
 9th.—Fog (at times rather dense) till 10.30 A.M. ; faint sunshine from 11 A.M. ; bright afternoon and evening.
 10th.—Bright throughout.
 11th.—Misty early ; brilliant day.
 A fine week, cooler than the previous ones, but still above the average.—G. J. SYMONS.



PECULIAR PLANTS.

PRESENT day demands for plants of decorative value, or such as will yield a plentiful supply of flowers and foliage for cutting, have caused many of the curiosities of the plant world to be discarded, and the tendency is to consider them as the lumber of the vegetable world. There are, of course, sufficient exceptions to this to prove the rule, and it is occasionally the source of considerable pleasure to a real lover of plants to visit a garden of the olden type where some of the plant wonders are prized as well as those required by the utilitarianism of modern times. It is true that in the now popular Orchid family we have a combination of structural peculiarities with great floral beauty, but the Orchids possessing showy characteristics have gradually ousted from most collections such curios as are found in the Pleurothalluses and the smaller Masdevallias. One group of essentially peculiar plants, the Nepenthes, holds an important place amongst indoor garden plants, and most deservedly, for many of them possess a large share of unique beauty, though they cannot rank with ordinary decorative plants. In recent years also popular and scientific attention has been called to the insectivorous plants, the Droseras, the Dionæas, and others, with the result that a demand was at one time created for "carnivorous" plants, and the inspection of these vegetables being surfeited with nitrogenous applications to their leaves afforded quite a sensational amusement. These plants, too, have been regarded with a species of dread, which a precaution adopted at Kew has had the effect of materially increasing in the minds of the unbotanical visitors who assemble there on Bank Holidays. The portion of the shelves devoted to these, with Sarracenias and other plants, has been railed off, and wire netting is stretched across to prevent persons of an experimental turn of mind practically testing the peculiarities of the Dionæas more especially. This has, however, been frequently mistaken for a means of protecting the on-lookers from the voracity of such vegetable monsters.

Marvellous moving trees have been described by imaginative writers in daily and weekly papers, the Rain Trees have had a large share of attention, and more lately the Weather Plant has been popularised in a like manner. Still, apart from all these sensational plants there are numbers which possess no garden value as usually understood, and which yet furnish much interest to the thoughtful and observant amateur or gardener. Amongst these the succulent plants from tropical and arid climates supply a diversity of strange forms, often accompanied by equally remarkable flowers. To the Cactus family I drew special attention in a series of articles published in the Journal some years since, and reissued in book form, which was followed some time afterwards by other works, all of which have helped to increase the popularity of several genera that include extremely beautiful as well as singular plants. In the United States of America, and on the European Continent, these plants are much more generally patronised than here, indeed the curiosities of plant-life are studied and grown with more interest altogether than in this country. With the exception of the Botanical Gardens comparatively few amateurs now attempt to make collections similar to those which characterised most enthusiastic horticulturists' establishments earlier in the present century. Since the late Mr. Peacock's collection was dispersed it is difficult to point to one of any extent, and Mr. C. M. Major,

Cromwell House, Croydon, is almost the only gentleman round London who makes a special feature of these plants.

The house devoted to Succulents at Kew is the most remarkable of its kind that could be seen anywhere; for while a large number of distinct forms are included, many of these, as in the Euphorbias and Cereuses, are represented by specimens fully developed to show the leading characters of their respective types. They also convey a good idea of the appearance these strange forms of vegetation present in the countries where they abound. Huge, fleshy, leafless stems, often unwieldy and grotesque in the extreme, yet producing in numerous cases flowers that absolutely astonish one in the production of such seemingly unsymmetrical or even deformed specimens. It is singular that plants with abnormally fleshy stems are not confined to a few families, though more numerous in some than in others, and the development of a thick fleshy substance is a kind of protective arrangement adapting them for existence under conditions that would prove fatal to many plants.

But all the succulent plants are not giants like the Cereus of America or the Euphorbias of tropical Africa; some indeed are diminutive and unpretentious in their growth. Amongst these smaller curiosities may be placed the majority of the Stapelias as regards their growth, but in the size of their flowers, judged by that depicted in the engraving (fig. 41, page 359), they might rank with some of the most remarkable plants in cultivation. At the recent Westminster Show a plant was sent from Pendell Court, Bletchingley, the residence of Sir George Macleay, of *Stapelia gigantea*, and as it was the first time it has ever been exhibited in flower in this country it attracted a large share of attention, and perhaps a little admiration also. Fortunately it had been very carefully covered with a large bellglass, and its odour was thus confined to a limited space, for like so many of its relatives, its odour is much more powerful than pleasing. As far as I can ascertain Pendell Court is the only place where this extraordinary plant has flowered, for though it is found in several other collections we have no record of the flowering having occurred elsewhere. It first flowered in October, 1889, and has repeated the performance this year about the same time. The flower when fully expanded was 10 inches in diameter, but has had to be slightly reduced to bring it within the page of this Journal. It is said to attain an even larger size, and one drawing represents a flower 15 inches in diameter. The corolla has a pale yellowish ground colour with abundant reddish dots, lines, or bars, arranged in a concentric manner, and becoming very small and closely placed towards the centre, where there is a slight purplish tint. Sir Joseph Hooker describes it as "A native of Zululand, where it was discovered by Mr. R. W. Plant, a collector thirty years ago, and sent by him to the botanical gardens of D'Urban, whence it was introduced into England by Mr. Cooper."

This is the true *S. gigantea*, but another species is found in collections under this name, and has probably been generally distributed—namely, *S. grandiflora*. A specimen of the latter received as *S. gigantea* flowered a few days since in Mr. Major's succulent house, and though the flowers are much smaller than the other, not exceeding 6½ inches in diameter, they are in some respects equally as remarkable. The whole flower has a peculiar dark purplish hue, very distinct from most other Stapelias, and the inner surface of the corolla is covered with dense hairs fully an inch long, and forming a kind of velvety pile that has a very strange appearance, increased by the fact that the hairs towards the tips of the lobes are whitish, forming a fringe. *S. hirsuta* and *S. Planti* are somewhat like the one just described, and the latter, with its pale yellow transverse bars, may almost be considered handsome.

Many other species could be named that are interesting in all respects except their odour, and it is not difficult to understand in some cases how the term "Carrion Flowers" became associated with

Stapelias, for in colour as well as odour the flowers in certain instances depart so widely from our floral ideal that they are too suggestive of putrid meat, and attract flies in plenty. Great as this defect must be considered Stapelias have found some cultivators, students, and even admirers. Probably Mr. N. E. Brown, of the Kew Herbarium, is one of the most enthusiastic in this matter, and I know he has for a number of years been growing the plants and investigating their characters closely. It was said at one time that we might expect an elaborate monograph of the group from his pen, but the task is a heavy one, and he has contented himself with a contribution to Hooker's "Icones Plantarum," dealing with the species of Stapelias collected by Sir Henry Barkly, when Governor of the Cape of Good Hope, from 1873 to 1877. In this work, which was only published a few months ago, about thirty illustrations are given of the most distinct forms, together with descriptions of many others, and analytical botanical "keys" to the genera and species. Some remarkable plants are represented—not only Stapelias, but Carallumas and Huernias, while species of Piaranthus and Hoodia are described.

In notes on peculiar plants, Hoodia Gordoni, a near relative of the Stapelias, must not be omitted, and the first plant which flowered in England was sent by Sir Henry Barkly to Kew. It has large, columnar, fleshy, ribbed stems, resembling some of the Euphorbias, the ridges being rows of strong yellow prickles. The flowers are 4 or 5 inches across, rounded, somewhat concave or bell-shaped when first expanded, pale sulphur yellow, with a central circle of rosy dots.

Returning to the Stapelias again, a few of the more noteworthy are *S. asterias*, "The Star Fish," very dark, nearly black, with livid transverse lines; *S. Bufonis*, yellow and black; *S. Hystrix*, small, sulphur, with purple dots, and numerous fleshy projections from the surface; *S. variegata*, an old inhabitant of English gardens, known as *Asclepias aizoides africana* to the earlier writers; *S. barbata*, *S. hirsuta*, *S. verrucosa*, *S. reticulata*, and *S. campanulata*—some of which are placed under other sections or genera—are all distinct and peculiar, while their floral structure is well worthy of a little study. Most of these are easily grown, their chief enemy being damp or stagnant moisture. They prefer a dry, warm, sunny position in a house, and an open well-drained compost of loam and sand, with careful supplies of water at all times, but especially in dull weather.

The list of peculiar plants might be greatly extended, but enough has been said to show that all the interest of plant life is not found in the groups for decorative use.—L. CASTLE.

GROWING AND SELLING FRUIT.

(Continued from page 334.)

FRUIT TREES FOR THE WALLS OF THE HOUSE.

ALL walls of houses and outbuildings may be used for fruit growing, and will bring in a good return of money if properly attended to. What kind of fruit will pay best depends upon the aspect, that is the direction, or point of the compass, which the wall faces. I shall therefore treat of them accordingly.

SOUTH WALLS.—The most profitable fruit these will grow are Peaches and Apricots, but in the coldest parts of the country these fruits are very uncertain croppers. In all such places Pears should be planted instead, or Victoria Plums.

WEST WALLS.—In districts south of London Apricots will succeed, but if north of London Pears or Victoria Plums should be planted.

NORTH WALLS.—Morello Cherries.

EAST WALLS.—Pears and Victoria Plums. Walls that have a N.E. or N.W. aspect should be planted with Morello Cherries in cold districts, but if south of London Marie Louise and Pitmaston Duchess Pears will succeed, those facing S.E. or S.W. same as for west.

PLANTING.—All should be planted in October if possible. If the ground near the wall is good and has been under cultivation no extensive preparation will be required, in fact nothing beyond that recommended for orchard planting; but if an old road runs by the side of the wall this should be taken out so as to form a

border 10 feet wide and 2 feet deep, the bottom below this being well broken up to allow of the water escaping, or if it is very wet the soil must be taken out 6 inches deeper at the back and 1 foot at the front, where a drain pipe should be laid to take the water away. The floor is then to be rammed hard and 6 inches of broken bricks or rough stones put in, putting some small pieces on the top to prevent the soil working down through the chinks and thus blocking the drainage. Rough angular stones should always be used, not flat ones like slates or tiles, as these become fixed together with soil and prevent the water from soaking away; over this drainage turves should be placed with the grassy side downwards, or if this cannot be got a good layer of straw will be better than nothing. The border should then be filled up with good soil from a garden or field, and allowed a fortnight at least to settle down before the trees are planted. All such work as this must only be done when the soil is dry, or it will bind firmly together and the roots of the trees will not thrive in it afterwards. Apricots should always have a firm soil to grow in with plenty of stones in it, and for all fruit that have stones inside it is a good plan to mix old mortar rubbish with the soil, unless there happens to be plenty of small limestones in the soil, when nothing else is required. All fan-trained trees should be 12 feet apart.

PRUNING AND TRAINING.

APRICOTS, PEACHES, PLUMS, and MORELLO CHERRIES should be trained dwarf fan-shaped—that is, the main branches must start from the stem like the spokes of half a wheel do from the centre. They require too much care in their very young state for the ordinary cultivator to bud and train them, and are best purchased as dwarf fan-trained trees from a respectable nurseryman. The price varies from 3s. to 5s. each, according to size and variety. Early in spring after planting the branches should be cut back about half their length, and any weak shoots cut clear out, leaving three or four branches on each side of the centre one, which should be cut back farther than the others to get more branches to start, and also to keep the centre of the tree always open like the letter V, until the side branches reach the top of the wall and the trees next to them. After pruning the young shoots the first year they may be secured to the wall by nails and shreds of cloth as usual, keeping their points spread out at equal distances from each other, and leaving a greater distance in the centre. As the tree grows larger year by year the width between the points of these main branches will increase, and there will be room for more of them, which should therefore be laid in during the summer, pruning from the sides of the older branches, as they are then easily bent into their proper position. They should always start from the upper side of the main branches—that is, the side nearest to the centre of the tree. When the leaves are all off the trees each season the young shoots may have their points taken off, about two-thirds of their length being left if properly ripened. This will induce the buds to grow at their sides and form fruiting spurs, and when the young growths are about an inch long in the spring all those starting from the front and back of the main branches should be taken off, leaving those springing from the sides, as they can be nailed in easily. In about a week some of these may be taken off, and in another week all which are not required may be taken away, doing the whole of this disbudding, as it is called, in three times, that the tree may not be checked in its growth, as it would be if all were removed at once. As those shoots lengthen which are left, they should be trained towards the wall in their proper places by placing young twigs about 9 inches long (cut from Privet hedges, or similar plants) behind one of the older branches at each end, so as to bend the young shoots towards their proper position and to keep them there. This is a very easy and simple operation, but does not appear so on paper. It is much better than nailing the young wood when in a growing state. The foregoing remarks as to disbudding apply only to Peaches, which bear best on strong shoots made the previous season. The shoots on other kinds of fruit trees should be left until about the end of July, and then all those not required for extending the tree should be shortened back to four or five leaves. It should always be borne in mind when pruning Peaches and Morello Cherries in the winter that the best way to get fine fruit is to cut out the old wood and train in the young, and to keep the tree of the same size, not to reduce it while doing this.

APRICOTS should be pruned soon after planting in the same way as Peaches and Morello Cherries, and spurred back in the summer, pruning to four or five leaves, to be shortened to about 1 inch at the following winter pruning, preserving those shoots entire at the ends of the main branches if hard and ripe, or taking about one-third off if doubtful.

PEARS should be grown as "cordon trees" on walls, and on wire fences. These are trained to one or two main stems, and the side branches spurred in to 2 or 3 inches in length. If the soil

is light and dry they should be budded on the Pear stock, as this is a stronger and deeper rooter than the Quince. The latter is the best for cold and wet soils. Cordon trees are easily raised by planting the stocks and budding them close to the ground in July or August; they may also be purchased as one year old or "maiden trees" at 8s. to 12s. per dozen. They should be planted about 2 feet apart, and trained diagonally—that is, at an angle of 45°, which may be found a simple way. If the wall or fence is 10 feet high take a piece of string 35 feet long, tie one end to the stem of the tree close to the ground, then take the string straight up the face of the wall to a nail at the top. This should be perfectly upright like a mason's plumb line. Next take the string after securing to the nail straight along to the top of the wall 10 feet to the right, and fasten to another nail; then bring the end back to the stem of the tree, and tie it where the other end is tied. This last piece will run at a true angle of 45°, and a piece of chalk drawn along it on the wall will show where the stem of the tree is to be nailed. Having one stem nailed in its place the others may easily be got right by keeping each one the same distance all the way up the wall from the one before it. During the second year's growth from the bud another shoot may be trained to the wall, starting on the upper side of the main stem, about 1 or 1½ foot from the ground, and training it in the same way, so as to form two main stems to each tree 1 foot apart. The wall or fence will thus eventually be covered with branches 1 foot apart from each other. The stems should not be bent on one side during the first two years from the bud, and only partly so the third year, as they do not grow so freely when trained in this way, which is the reason why they are treated thus, as the sap by this means is kept from flowing so freely to the top of the tree. Pruning of these cordon trees is very simple, and consists in shortening the side shoots to 3 inches in length early in August to strengthen the buds at the base, and at the winter pruning cutting still farther back to about 1½ inch. The leading shoot must always be left full length, and secured by nails and shreds to keep it straight until the winter, and then about one-third of its length may be cut off until the tree reaches the top of the wall, when the points may be cut back like the side shoots.

VARIETIES.

PEACHES.—Early Alexander for earliest crop; ripens in the midland districts third week in July. Dymond for midseason; Princess of Wales for late crops. In very cold districts the latter should not be planted.

APRICOTS.—Where Apricots do well in the neighbourhood Moorpark is the best variety to plant, but if they die off suddenly, as they do in many places, a hardier variety, such as Hemskirk or Breda, should be grown.

CHERRIES.—The old Morello is the variety that pays best.

PLUMS.—Victoria is the most profitable kind.

PEARS.—Early, Williams' Bon Chrétien; midseason, Marie Louise and Pitmaston Duchess.—W. H. DIVERS.

(To be continued.)

PROFITABLE FLOWER CULTURE.

INDIAN AZALEAS.

WHERE there is a good local demand for cut flowers these Azaleas pay well, and may be said to be indispensable, this being more especially the case with both single and double white varieties. The good old Fielder's White, and the still more common Alba are of excellent service, either when forced or allowed to flower naturally, and all who hold large plants of these should take good care of them. We have frequently cut flowers to the value of 15s. from moderately large freely grown plants of the latter, it being in great demand for memorial wreaths and crosses. Lady Poltimore, a much newer single white variety, is also of free growth, forces well, and is one of the best that can be selected. As a rule, however, the double or semi-double whites are the most serviceable, and should be the most extensively grown. These, in addition to being in demand for bouquets, wreaths, and crosses, are also largely used for church decoration at the principal festivals, and we have frequently sold enough flowers from plants the same season they are bought in to pay for the same. Deutsche Perle is perhaps the most valuable Indian Azalea in cultivation, this remarkably precocious double white variety generally commencing to produce flowers in October or early in November, and continues to yield more for at least three months longer. A moderately large stock of plants very gently forced in succession would afford a good supply of flowers throughout the winter, finishing well at Easter. This, then, should be the most extensively grown, but there are a few others that are also well worthy of a place in a

limited collection. Bernard Andreas alba is an exceptionally fine double white, and good alike for midseason and late flowering. It grows strongly, and never fails to set buds plentifully. A. Borsig is another good white, and possesses the additional charm of being sweet scented. Much the same description applies to Raphael, and if a good late double white form is desired it will be found in the very floriferous Souvenir de Prince Albert alba.

The greater number of these Azaleas are imported from Holland, the Dutch growers apparently being able to supply the British trade far more cheaply than the plants can be raised in this country. None that I have yet had under my hands the same season they were received in this country had their pots well filled with roots; in fact, I believe most of them are either newly potted from beds of peaty soil, or are lifted and sent across without being potted at all. Under these circumstances they require to be very carefully watered, the plants being in very light spongy material, drying very quickly, and more often than not get too little, rather than too much, water. Kept in a uniformly moist state at the roots, and in a warm greenhouse, they rarely fail to flower well, and during the growing season well fill the soil with roots. The best time for repotting Azaleas generally is just when they are growing strongly in the spring or early summer months, this being when root action also is most briskly going on. But if this is the best time for repotting, it does not follow it cannot be done with safety at any other time of the year. On the contrary, rather than the plants, whether large or small, should be in a sour state at the roots, this usually resulting either from overpotting, unsuitable compost, defective drainage, or worms in the soil, I would turn them out of the pots, prick away the worst of the soil, and repot whenever they are found in this bad condition. This drastic proceeding might hasten the death of some of the most neglected plants, but would undoubtedly save the life of the rest. Azaleas, in common with all other hardwooded plants, can be, and ought to be, kept in comparative small pots, large shifts in particular being always avoided, and above all clean, well-drained pots should be used. If very light fibrous loam is available, one portion of this may be used to three parts of good fibrous peat and one of the best sifted leaf soil, fine charcoal and silver sand being also freely added. In our case the loam is of a heavy or clayey nature, and consequently not a particle of it is used for Azaleas. One inch of space between the old ball of soil and roots and the pot is ample, and in this the fresh compost ought to be packed or rammed as firmly as possible, good space being allowed on the surface to hold water, too little water after repotting frequently leading to the ruin of the plants. As before stated, if the old soil is in a sour state, much of it is picked away from the roots, but when the balls are closely occupied by healthy roots, it is advisable to just loosen these only with a pointed stick.

Good care ought always to be taken of Azaleas after the flowering and during the growing period, whether they have been repotted or not. They should where possible have the benefit of gentle heat, and be syringed frequently. They also require a certain amount of shade, rolled glass suiting them well. A vinery being gently forced or kept say at about 55° to 60° in the night time, and from 10° to 15° higher during the day, will always be found a good position for the larger plants especially, these being stood either on boards, slates, or inverted flower pots. Nor ought the cultivator to be in a great hurry to clear the houses of Azaleas, thousands of plants being annually injured beyond recovery owing to the reckless manner in which they are bundled out into the open air. If they must be turned out the least that can be done is to wait till the buds are well set and plenty of fresh root fibres are formed. In our case the plants are never outside the houses, and they all flower remarkably well in spite of the severe pruning they have when the flowers are cut every season. Some old plants about 5 feet high have for the past three years been kept near the back wall of a late vinery, and these flower astonishingly well, a long succession of bloom being had from them. At the present time they are well set with buds, and the bulk of these will without any further trouble on our part be expanded at Easter. There is really no reason why back walls of vineries should not be clothed with Azaleas, the roots being confined to narrow peat borders. Those who must turn out their stock of plants into the open every summer should at least avoid setting them on a cold moist base of any kind, this in addition to being prejudicial to a healthy root action being nearly always attended by a plentiful stock of worms, and which quickly clog the drainage and sour the soil. They ought, therefore, to be blocked up in some way, boards, flower pots, and bricks all being available for the purpose. The plants must also have an awning of some kind of shading material strongly fixed above them, and be housed before cold autumnal weather sets in. Retarding can be more safely and effectively accomplished in cool airy houses than in the open, and everything, therefore, points to the advisability of keeping the

plants exposed to all weathers as short time as possible, or say not longer than the middle of September. None of them, whether large or small, should be wintered on a moist base, or otherwise the chances are that most of them will commence growing afresh long before their natural flowering period, and the flowers that do open be of much less value accordingly. Set the larger specimens on inverted flower pots, and the rest on dry greenhouse stages, and if the hot-water pipes are kept just warm any selection of varieties or a large stock of *Deutsche Perle* will give a long succession of bloom without any being actually forced. All should be kept carefully supplied with water, but no liquid manure ought to be given till after the flowering period, and then in a weak state, and to the strong root-bound plants only. A judicious use of liquid manure and an annual light top-dressing of either turfy peat or light fibrous loam and flaky manure well keep strong old plants in a healthy growing state for many years, repotting being unnecessary.

When used for wreaths and bouquets on the place *Azaleas* flowers may be taken without wood attached, as they keep nearly or quite as well mounted on wires, either singly or in bunches of three or more flowers. When sent to shops or to a distance or supplied to church decorators they must be cut with a short length of young wood attached, but the plants being healthy and kept in gentle heat to form fresh growth, plenty of young shoots are usually forthcoming from the shortened wood. I ought perhaps to add that formally trained *Azaleas* are not of much value for affording cut blooms, those more freely grown, whether as half-standards, bushes, or pyramids, being by far the best for the purpose. Shallow boxes are most suitable for packing the flowers in, these being either lined with clean soft moss or cotton wool, the material in either case being covered with tissue paper. Packing the flowers flatly, closely, and in a single layer, cover with more of the paper and enough cotton wool to keep all quite tight when the lid is shut down. Thus packed they will travel equally well by rail or post. At Christmas the doubles are worth from 2s. to 2s. 6d. per dozen sprays, and the singles usually 1s. less. Subsequently the prices may drop to as low as 1s. per dozen, but will revive somewhat at Easter.—M. H.

TREE PLANTING.

NOTHING new have I to say to the veterans among gardeners and foresters who have been engaged in planting so long, that any detailed account of the process which has rendered them so successful and their work so satisfactory to themselves and their employers may appear altogether uncalled for. So it is for them, as the right way is the only one possible in their work; but please remember there are the young hands and amateurs to whom sound practical hints are of the utmost value, both as helping them to understand the why and wherefore of what they have to do, to avoid errors, and to render their success as full and thorough as possible.

That failure is often the highway to success for an earnest teachable man there can be no doubt, and in planting anything less than success entire and perfect should be regarded as failure. One of the most unpleasant incidents of my planting experience was the failure of a considerable number of young forest trees in a belt, for which the trenching and levelling came under my supervision as estate manager, but the planting was managed entirely by a young hand so brisk and energetic that his sole aim appeared to be to get over work at express speed, without giving heed to that thoroughness which is so essential to success. The failure of the trees was most probably owing to root dryness before planting, and looseness of soil about the roots. It was suggested that the trenching was at fault, but even if it had been no deeper than ordinary digging, instead of the sound two-spit work it was, that could not have caused the loss of the trees. The resolution then formed never to have anything more to do with joint management in such work is a safeguard which I commend to the attention of other planters.

There can be no doubt that much exposure to the air is most hurtful to the roots, and through them to the trees. This happens when trees are lifted for the planting and are embedded temporarily in loose soil, so loosely that the roots become dry and shrivelled, and the rootlets perish. This also happens in some degree when trees are laid out in long rows with the roots exposed to a brisk wind, and possibly to sunshine, for a considerable time before the planters reach them. Still more hurtful is it when they are so laid out during a frost, and are subsequently planted in half-frozen soil. No fanciful conception is this, for I have seen it, and have also seen evidence of its baneful effects subsequently in the numerous failures and sickly appearance of the survivors.

Not only should the manager of tree planting be thoroughly

proficient, but he must see that his orders are carried out to the letter, or it may happen to him as it did once to a friend of mine who ordered a trench to be opened along each side of a Yew hedge very early in the autumn, to sever all long roots and induce a free growth of rootlets before the trees were transplanted a couple of months later. The trenches were opened, but the soil was not replaced, so that his object was defeated, and instead of vigorous growth next season the ill-used trees had a struggle for bare existence.

There is more risk of failure with trees from a nursery than others, and the greatest possible care should be taken to thoroughly embed the roots in fine soil at once as the packages come to hand. If such soil cannot be had in a satisfactory condition damp sand or fine ashes answer admirably, as they envelope all the roots closely. If the weather is frosty the sand is well covered with litter till the frost breaks. In planting the roots are spread out at full length, fine soil packed closely about all of them, 3 inches of soil over the upper roots pressed gently but firmly down over the whole of the roots. A close watch must be kept to prevent injury to root, stem, and branch during this work. Every tree requiring support must have it at once, and this must be managed so that there can be no subsequent injury to the stem. Envelop the stem loosely with rabbit-proof wire netting, with the edges overlapping sufficiently to allow the netting to expand with the growth of the tree, and if the trees are out on pasture there must be a tree guard of some sort to keep off cattle.

Transplanting large specimens is always a questionable matter. It was with much reluctance that I recently condemned a lot of fine young *Pinus austriaca* some 8 or 9 feet in height, which are in the way of some garden extensions. A considerable number of this useful Pine are to be planted, but experience has shown that smaller trees answer best, for though the large ones may be transplanted the check to growth is not fairly overcome for four or five years, and by then the younger trees will have shot up past them and will keep the lead. The very natural desire for immediate effect has led to much costly work in the transplantation of large specimens, especially among Conifers, and when the work is insisted upon the certain result of arrested growth should be clearly explained, and then move the trees with as large a ball of earth as possible. If a large rectangular block of soil after the Elvaston method can be managed so much the better for the tree, which must subsequently be well secured with guy ropes or wires.

In planting fruit trees, the advice to prune at the time of planting given for Apples by Mr. G. Hammond, in his admirable paper on page 328, may be applied to all fruit trees; only take care to select healthy trees and plant carefully, and then prune at once to the buds whence growth is required next season, in full confidence that such growth will prove entirely satisfactory. Remember, success does not rest upon the pruning so much as upon the planting, and it is when this has been badly done that free growth has not followed; it is, of course, easy to lay blame upon the pruning.

Plant as soon as possible now, in order that the trees may make some root growth at once, and so ensure unchecked branch growth and a plentiful supply of sap direct from the roots next spring, Mr. J. A. Reeves' new sap theory notwithstanding.—EDWARD LUCKHURST, *Warrens, Harold Wood, Romford.*

CULTURE OF CYCLAMEN PERSICUM.

ALTHOUGH the culture of the Persian Cyclamen has been frequently written about, yet the plant baffles the majority of private gardeners. I believe many failures may be attributed to having a poor strain of seed, as it is impossible to grow good plants from seed which has been saved from debilitated parents. Grow the plants how you will, they have an inherent weakness that you cannot remedy. Of course good culture will have to be combined with good seed, or satisfactory results cannot be expected.

Next to the seed the soil is the most important consideration. The Cyclamen appears to have a partiality for soil which has a fair proportion of lime in its composition, and where this is known to be deficient some old lime rubbish should be added. Sowing may be done at various times, but for producing good flowering plants by next Christmas twelvemonth, the present is a good time. The seed should not be sown in a haphazard manner, as on this operation success in the earlier stages of the plant's progress depends. Procure some ordinary seed pans, and half fill them with drainage. Over this place a layer of flaky leaf soil, and fill with equal parts of leaf soil and loam, with a good addition of silver sand. Press in rather firmly, and fill within a half-inch of the top. The next proceeding is to dibble the seeds in singly, an inch apart, and a quarter of an inch deep. This is exactly how the seed is sown by some of our largest growers, and is considered of particular importance to secure good results. The benefit of being an inch apart will be seen.

later on, as at this distance the seedlings do not require pricking off, consequently do not receive a check. After the seed is sown give a gentle watering, and cover each pan with a sheet of glass, and over this place a layer of moss, to exclude light and so stop rapid evaporation. The best position for the pans is a moist pit, where the temperature averages about 60°.

As soon as the seedlings appear remove the moss and glass, and place the pans near the roof, so as the little seedlings receive all possible light, or they will become "drawn." As soon as the second leaf appears, lift the seedlings out with a label with small balls of soil attached, and transfer into thumb pots. Pot rather firmly, just covering the small corms, but not the crown or stems, or the base of the leafstalk will become weak and the leaves fall over. The plants should then be placed on shelves near the glass, and stand on a base of cocoa fibre refuse kept moist, or if there is convenience plunge the pots to the rims. This keeps the roots healthy, preventing rapid evaporation. The soil must be fairly moist. Sprinkle the foliage on fine days, and as the sun gains power shade from bright sun, but expose to all the light possible. Early in April the plants should be ready for repotting into large 60's. The soil at this potting should consist of two parts fibrous loam, one part sifted leaf soil, and one part well pulverised cow manure, with sand and charcoal broken up fine, and also with the addition of some old lime rubbish broken up. Pot rather firmly, making the surface level, and return them to the same position; ventilate rather freely, but not so as to cause a draught or an arid atmosphere.

The plants will grow rapidly, and when they are well rooted transfer into 5½ inch pots. Use the soil in a rather rough state, but the leaf soil and manure should be sifted. Pot firmly, as this is very important, and elevate the crown of the plant just above the surface. In our case the plants are now placed in cool brick pits facing the south, within 6 inches of the glass, and are also half plunged in cocoanut fibre refuse. Keep the frame rather close, and shade with tiffany from bright sun. The plants should be sprinkled about 3.30 P.M., and the lights closed. The plants must be carefully watered, taking care to use soft water both at the roots and over the foliage. During the daytime the lights must be tilted at the back according to the weather.

Shade from bright sun, but during September the plants are only shaded to prevent injury. If they need shading, they receive it, as the foliage should not become limp whatever the season. No rule can be laid down, so the man in charge must be guided by surroundings. For instance, on account of our exposed position we cannot ventilate so freely, and the plants also require more shade than in a more sheltered garden. The first week in October will be time enough for housing, and this should be into a light span-roof. Here the temperature should range about 50° as a minimum. The blooms in this temperature should become fully developed. Just a word on watering at this stage. This must be performed carefully but yet thoroughly, taking care not to pour water into the heart, or a number of blooms will suffer by damp.

I have not yet mentioned insect pests. Green fly is about the only foe to contend with in an ordinary way. Some growers recommend fumigation, but I prefer dipping in a solution of quassia chips and softsoap. A large number of plants may be done in a short time, and the mixture reaches all parts. When fumigators are used the fly is apt to descend into the heart of the plant, and come out again in a day or two.—A. YOUNG.



CYPRIPEDIUM CONSTANCE.

At the meeting of the Royal Horticultural Society's Orchid Committee on August 26th, 1890, Mr. Drewett O. Drewett, Riding Mill-on Tyne, exhibited three hybrid Cypripediums that may be welcomed as useful additions to the list. One of these named Alice was raised from *C. Stonei* and *C. Spicerianum*, the dorsal sepal white suffused with pale purple; the petals are greenish yellow dotted with brown; the lip is in the style of *C. Stonei*; it is a delicate and pretty flower. *C. Alfred* is from *C. venustum* and *C. phillipinense*, somewhat like an enlarged and improved form of the seed parent. The third hybrid was named Constance, and was obtained from *C. Stonei* crossed with *C. Curtisi*. A flower of this is shown in fig. 40, and indicates the combination of characters cross as regards form. The dorsal sepal is broad

and white with purplish streaks, the petals are 3½ inches long, pale yellow with brownish purple dots, and a few marginal hairs. The lip resembles *C. Stonei* in shape and colour. The plant seemed to be of vigorous and free-flowering habit, and the success Mr



FIG. 40.—CYPRIPEDIUM CONSTANCE.

Drewett has attained should encourage him to make further experiments.—C.

PERISTERIA ELATA.

At Dove Park, the residence of Mrs. Cope, Woolton, near Liverpool, I recently noticed two fine plants of the Dove Flower in bloom. The largest was in a 10 inch pot, and had four fine spikes; the second in an 8-inch pot had two grand spikes, each carrying a large number of blooms. Mr. Carling, the gardener, evidently has the right system of culture. Plenty of heat and moisture, the latter judiciously applied, and a thorough season of rest when growth is completed, are the chief elements to its successful culture. It is so refreshing to see this Orchid when in flower that a note about it is always acceptable, for it is too often met with under indifferent conditions.—R. P. R.

ODONTOGLOSSUM ALEXANDRÆ.

Where the temperature was kept 50° to 55° throughout last winter flower spikes will be showing freely from the axils of the leaves at the base of the newly made pseudo-bulbs. Some care is necessary to protect these from slugs. A little cotton wool round the leaf and spike will often prove effectual, but it must be kept dry or is useless. Every time the plants are watered it must be renewed. If every care has been taken throughout the season slugs should not be numerous, and may be kept down by examining the plants soon after dark with a light, after damping well amongst the pots. A few tender Lettuce leaves may be laid down, and will prove a capital trap if inspected about two hours afterwards. If left until morning the slugs will feed and disappear again to their hiding places. Where slugs are very numerous the only certain remedy of protecting the spikes from their ravages is to suspend the plants from the roof.

ODONTOGLOSSUM ROSSI MAJUS.

The earliest plants are unfolding their flowers, and with judicious management will yield a supply until February. For cutting purposes this is one of the most useful Orchids grown. Plants

that are to flower late should be removed directly they have completed their growth. They will bear any cool shady position where frost can be excluded from them. In this position do not keep them too wet at their roots, and on the other hand do not allow them to become too dry. If kept wet the roots decay, and the tips of the foliage soon commence decaying. This Orchid grows freely, even luxuriantly, in small shallow pans, but often fails to do well when placed in large pans or baskets, which necessitates too much soil about their roots.

CYPRIPEDIUM SEDENI.

This is a useful Orchid, for a large plant is nearly always in flower, and is very effective in the structure in which it is grown. It is practically useless for conservatory decoration; but the individual flowers are useful when arranged in small shallow vases, partially filled with clean green moss and sprays of *Adiantum cuneatum* laid over it. The flowers of *Pleione lagenaria*, associated with this *Cypripedium*, are very telling; in fact, it is the only method of displaying to advantage these short-stemmed flowers unless they are wired.

DENDROBIUM NOBILE.

Plants that have well ripened pseudo-bulbs, and have been resting for some time, may be introduced again into heat, when they will be induced to flower. The flowers are always useful, and may with care and judgment be had over a lengthened period by pushing plants into growth at different periods. Plants that have completed their growth should be placed into a cool, dry, airy position after they have been carefully hardened. A late vinery in which Grapes are hanging will be a capital place for them. Even in this position expose them to the sun, and give sufficient water only to prevent their pseudo-bulbs shrivelling. More harm than good is done if the plants are kept wet at their roots while in these positions.

DENDROBIUM DENSIFLORUM.

Discontinue the syringing of plants that have completed their growth. Keep the atmosphere drier, and gradually diminish the supply of water. Give sufficient to keep them fresh and plump. The object is to harden and ripen their pseudo-bulbs thoroughly before removing them to a cooler place. *D. thyrsoiflorum*, *suavissimum*, and others of similar habit of growth should be subjected to the same treatment where their growths are sufficiently developed.

DISA GRANDIFLORA.

These are constantly attacked by aphides if the conditions under which they are grown are not suitable. The plants should stand on a moist base at the coolest end of a cool house where they will be safe from frost. A circulation of air must be maintained daily. Although they enjoy abundance of air they should not be subjected to cold frosty air striking direct upon them. This does more harm than good. If the pans in which they are growing are well drained, give liberal supplies of water, and syringe the plants once or twice daily. They will grow luxuriantly under these conditions, and seldom be troubled with aphides. Carefully protect the foliage from slugs.

ODONTOGLOSSUM VEXILLARIUM.

Where these have been grown in the cool house and a low temperature only is maintained they must be removed to warmer quarters. The Cattleya house will suit them very well where the temperature of this structure for the winter ranges about 60°. If the *Odontoglossum* house is not allowed to fall below 50° at six o'clock in the morning during the winter, they will be safe at the warmest end, where temperature will average 55°. *O. Roezli*, and others that require a little more warmth will be safe under the same conditions.

ONCIDIUM VARICOSUM.

This and *O. Rogersi*, if grown in the Cattleya house, will be throwing up freely, and soon be in full flower. The flowers will be more useful some weeks later, and therefore suspend the plants in the *Odontoglossum* house, where they can be safely retarded for some time. Keep these plants rather dry.—ORCHID GROWER.

TOMATOES.

I WAS very much interested in the notes (p. 287) of Mr. W. R. Raillem and "W. S." on outdoor Tomatoes. I have not been so successful as I hoped to be this year with outdoor crops, but still I have been able to pick a fair crop. I have tried outdoors a number of varieties and I find, as "W. S." reports, *Chemin Red*, *Ham Green*, and *Peach* are very good croppers for the open even when not having the benefit of a wall, for most of mine were staked out in the open in an exposed position. The *Peach* carries

a quantity of small fruit, and to my idea is worthless, although a dish now and again may be acceptable if the flavour is liked, but I have found few that appreciate it. *Chemin* I had from MM. Vilmorin, and I am very pleased with it both under glass and outdoors. It is a good cropper, free setter, beautiful heart shaped fruit of fine colour, and above all, in a monetary sense, profitable, for it is the heaviest Tomato for its size I know. The plants that were put outside were late ones and I hardly expected much, but I was agreeably surprised to find a very fair crop which I commenced to pick about six weeks ago. The earliest to bear outside and one of the greatest croppers, albeit the fruit are small, was *Prelude*. This is a really good variety and you are sure to procure ripe fruit any season off it, and if the fruit is small the flavour is unexceptionable. Early *Ruby* and *Table Queen*, which were sent me from New York, are both good, the former doing well outside, being early, a great cropper and dwarf growing, and I found it satisfactory under glass, although *Table Queen* is far better for that purpose. This is an enormous cropper, bearing large and very flat fruit of good quality, and I would not wish for a better Tomato if the colour were scarlet instead of crimson.

Golden Sunrise I found to be the same as I did last year, and I must own I was very much amused at one sentence of "W. S.," in which he speaks of it as being "one of Mr. Iggulden's first favourites, on account of the quality of the fruit." Last year Mr. Iggulden found fault with it, saying the flavour was too flat. I am afraid "W. S.," who I believe is a neighbour of his, has "let the cat out of the bag," and we now find Mr. Iggulden has learned to appreciate the "flat." I also tried two sorts, both called *Trophy*, grown extensively by two market growers. They were very dissimilar in appearance and growth, but both cropped well, one being the best fruiter I ever saw; but I am afraid I shall have to discard it, for whereas my other varieties had the leaves diseased, only this variety had a large quantity of the fruit badly diseased. Were it not so I would have no other variety for main crop. *Advancer* was only tried under glass, and found early and a great cropper, but the fruit too small. *Eclipse* outdoors had similar results. *Ham Green* was satisfactory under glass as outdoors, and the fruits are very handsome and of good quality.

Amongst others I received from Mr. W. Wright of Talygarn a selection from Glamorgan, which I have christened *Talygarn*, and this was the first to ripen fruit indoors. It is early and a good setter, with fruit of a bright scarlet. It is not beautiful, being corrugated, but it is highly useful, having a moderate growth, and carried off a given space more fruit than any but the so-called *Trophy* mentioned before. Some extra selected *Trophy* (true) which I tried was very unsatisfactory. *Tennisball* is too small, but crops well. *Glenlivet Favourite*, which I expected to turn out something extra, was disappointing, being with me a very moderate cropper, but the fruits were well shaped and of medium size. *Conference* was very useful, the appearance and flavour being very good, but I have come to the conclusion that for outdoor work nothing can beat *Prelude* and *Laxton's Open Air*, which never fails to ripen a heavy crop of good fruit, and for culture under glass *Table Queen*, despite its colour, *Talygarn*, *Ham Green*, and the market *Trophy*, with *Golden Sunrise* for a yellow, are most profitable and satisfactory. Mr. Iggulden has a very fine strain of the *Old Red*, and anyone who has it as good would not fail to grow it. *Chemin* might also be grown, and as I shall procure my seed of this earlier next season, I have no doubt it will prove itself equal to the others as a bearer of a great weight in a small space.—H. S. EASTY.

TRANSPLANTING LARGE SHRUBS AND TREES.

IN the remarks of "D.," page 310, on the above subject he says, "Strong soils never answer well for transplanting large shrubs," he thinks it is the best policy to have quite young plants. Now from my experience, when a new garden is made or any part of an established ornamental shrubbery is renovated the general plan is to plant thickly for immediate effect. In a very few years, if the progress of the trees or shrubs is satisfactory, it is necessary to thin and re-arrange, or in a few years more there will scarcely be a presentable specimen. If the plan which "D." recommends were followed the whole of the plants in the shrubberies would have to be burnt or a greater part of them, instead of thinning by removing the surplus to other parts of the garden. This I fancy cannot very well be adopted by most gardeners, because just at that time shrubs of a large size are becoming interesting as they assume their true character. We have a bad soil to deal with; it is not actual clay but a near approach to it, being tenacious, and with it is freely mixed large flint, the whole binding together in one solid mass, which is most difficult to separate when dry and extremely "sticky" when wet. It is termed a "cold, unkind soil," and one in

which new roots are not quickly made after a shrub or tree has been replanted. In spite of this we annually thin many shrubs and trees so as to keep the shrubberies as presentable as possible. Plenty of shrubs and trees we move from 6 feet high to 12 feet high, and with excellent results, even the first year after removal. This month we have a good number to replant, such as *Thuia Lobbi*, *Thuopsis borealis*, *Picea Nordmanniana*, *Cedrus deodara*, *Abies grandis*, *A. Menziesi*, and many others of the same class and size. I hope to have the work done with as little delay as possible, as I find the present is the best time for such work. The trees are in a much better state to resist the searching winds we experience in March and April than though they were not replanted until that period. I would strongly advise all who have shrubs of the size named not to destroy them, but set about replanting in the manner I will describe, as a few hints on the practical method of shrub moving may not be out of place at a seasonable time like the present.

The first thing to do with any tree that has to be lifted is to tie up the lower branches with cords, so that they will not be in the way of those who have the soil to remove. The branches are made secure also from injury, as if left loose they might be broken or otherwise damaged. With four-pronged steel forks a trench is then dug in a circular form around the tree and 3 feet from the stem on all sides. A spade or small shovel is also required to remove the fine soil. By using forks the roots are not damaged nearly so much as if spades were used, in fact the latter tools are of little use here where so many large stones are encountered in lifting a tree or moving the soil in any manner. At a depth of 1 foot from the surface the soil is gradually worked out underneath the tree all round until a space of 2 feet under the centre of the tree remains. At this stage the tree will generally be ready to heel over by putting the forks underneath the "ball" of soil and roots at one side, lifting up the roots gradually; at the same time someone should gently bend over the stem of the tree.

When the tree is partly turned on its side we fix beneath the roots a part of what we call our lifting cloth, which consists of a square piece of sail cloth 5 feet over; the sides are double thickness, being strongly sewn together, forming a hemmed side. Eight ropes, 5 feet long and half an inch in diameter, are secured to the cloth by fastening them to sewn eyelets in it—one at each corner, and an extra one between those named. The cloth is doubled in the middle, so that when the tree is bent on one side to admit the canvas being placed underneath the tree, and then repeated on the opposite side, the remaining part of the cloth is pulled through with the ropes attached; the tree is then allowed to assume a natural habit of erection. If the tree is properly balanced on the cloth the ropes afford a capital means of lifting it out of the hole on to a low trolley if any distance is to be travelled. The ropes are then made secure around the stem in such a manner that the cloth prevents the soil falling from the roots on the paths. If the weight of soil and roots is very great a stout plank is used to assist in removing the shrub from the hole on to the trolley and off it again, as it is easier to slide the mass of soil and roots up a gentle ascent on a plank than to lift the whole by sheer strength. The position which the plant is to occupy in its new quarters having been settled, the hole is prepared before the plant is removed from its old site, so that the roots shall not become dry by exposure; these are kept covered as well as possible, which prevents shrivelling and check. For fully 1 foot around the roots the soil is removed, the bottom of the hole trenched 1 foot deep, which prevents water collecting.

Care is taken that all shrubs are planted so that the surface roots will not be below the original level of the ground. The soil is broken fine and carefully placed about and amongst the roots, making the whole quite firm. Six inches from the surface a layer of partly decayed manure is placed on and covered with soil. If the soil is at all dry, a good soaking of water is given to the roots, and a thick mulching of manure is laid over them on the surface, which prevents evaporation of moisture from the roots. Every tree that requires support is at once attended to. It is a bad plan to delay the staking of newly planted shrubs or trees; the wind loosens the soil about the stems so much that a check to a quick growth is almost certain to take place, and in some instances results in death. For a 12-foot tree two stakes should be used if in a windy position. These are driven into the soil at a distance of 1 foot from the stem of the tree, a small piece of old bag or a wisp of straw is wrapped tightly around the stem, to prevent the bark being rubbed by vibration of the whole tree. Stout Hazel wythes is the best of any method to secure the plants to the stakes; such wythes will last well for two years, and are much better than tar cord or thick string, which expands by exposure to the weather, which do not act upon the wythes in the same way, but they remain secure, and owing to their being stiff when twisted together, do not admit of the

plants rocking with the wind. For a shrub 12 feet high, a stake 5 feet out of the ground is long enough.—E.

My experience with shrubs is very different from that of "D." (see page 310). We have both very light and very heavy soils to deal with, and without exception the plants growing in the strongest loam and clay transplant the best. In every case the trouble of cutting back the roots is taken the spring preceding the autumn in which the shrubs are transplanted; we thus secure a capital ball of soil, the outside at least of which bristles with growing points.

I think it well to point out that your correspondent has not taken into account the following facts when condemning the practice of employing large shrubs instead of small ones. It sometimes happens that the employment of specimens is absolutely indispensable. I often have such cases, and have ere now been at some trouble in securing large enough specimens from nurseries to meet certain requirements. Three years ago such a case occurred, and again during the present year. I took the trouble to see that the shrubs were prepared a few months before removing them, and thus secured an immediate effect, which with ordinary shrubs would have taken at least twenty years.

Going back a dozen years, when the intensity of the frost destroyed many tender shrubs and killed others to the ground, we had bad backgrounds exposed which had to be concealed as quickly as possible. This was accomplished by removing large Yews, Portugal Laurels, and Rhododendrons from less important or overcrowded positions into these exposed spots. The result was immediate. What has followed where the injured shoots have made young growth has been to either remove the latter to other places requiring making up, or to take away the former and leave the old plants to fill their old positions.

I prefer to remove all shrubs subject to damage by severe frost, from places where they cannot fail without causing a serious blank, and leave the quite hardy shrubs to do duty for them. At the present time I await an opportunity of securing a number of old and large shrubs, many of which must be from thirty to fifty years of age at the least. They all occupy positions where they would require to be cut back to allow other shrubs room to spread, but by removing them to other places which are too thinly planted, or where decaying plants require renewing, we feel amply repaid for the extra trouble. As regards Conifers, it is decidedly objectionable to buy in large plants, but when it happens that specimens are being damaged for want of space, there is no good reason why they should not be transplanted, and with ordinary care in cutting in the roots some months before operating, and with care in removing, quite as fine shoots may be made as in ordinary seasons. I find that the season the roots are cut, the growth is not so good, especially if the weather be dry and no water given, but the next year growth begins to assume its normal state, and it is impossible to say from appearances that the specimen had been removed at all.—B.



MEMORIAL TO THE LATE MR. WILLIAM HOLMES.

A MEETING of the members of the National Chrysanthemum Society and friends, convened by special circular, was held at the Royal Aquarium on Wednesday, October 15th, 1890, to consider the expediency of raising a memorial to the late Mr. William Holmes.

Mr. R. Ballantine, Chairman of the Committee of the National Chrysanthemum Society, presided, there being a large attendance of sympathisers. The circular calling the meeting having been read, it was stated that letters expressing approval of the proposal had been received from Mr. John McKenzie, Linton Gardens, Staplehurst; Mr. J. T. West, Cornwall Gardens, Brentwood; Mr. J. C. Restall, Broad Street, Birmingham; and Mr. E. Wilson, Uffington, Stamford; and a letter was read from Mr. D. B. Crane of Highgate, making some suggestions as to the form the memorial should take.

The Chairman opened the meeting by setting forth the objects for which they were met, and invited suggestions from those present, both as to the expediency of raising a fund to provide a memorial, and also as to the form the memorial should take.

After some discussion it was moved by Mr. T. Bevan, seconded by Mr. Witty, and carried unanimously, "That in the opinion of this meeting it is desirable to raise a memorial to the late Hon. Secretary of the National Chrysanthemum Society."

Considerable discussion followed, and suggestions were offered by Messrs. Shea, Doughty, Broughton, E. Molyneux, E. Harland, and others as to the form the memorial should assume. It was then

resolved to raise a fund, to be called the William Holmes' Memorial Fund, and that a Committee be formed to obtain subscriptions to the same, and to consider suggestions and formulate a method of applying the Fund.

It was also resolved that the following should constitute the committee, together with the officers of the Society and the representatives of affiliated societies:—Messrs. E. Sanderson, E. Molyneux, J. Laing, T. Bevan, H. Cannell, L. Castle, Geo. Stevens, W. Roupell, W. Witty, N. Davis, C. E. Shea, E. Beckett, C. Gibson, G. Gordon, G. Prickett, B. Wynne, R. Owen, and E. F. Kemp.

Mr. Harland of Hull proposed that Mr. Lewis Castle be desired to act as honorary secretary, and consent having been given, the proposition was duly seconded and carried unanimously.

Mr. Molyneux's suggestion, which was most favourably received by the meeting, was as follows:—"That the memorial take the shape of a class or classes in the schedule of the N.C.S., to be called the Holmes' Memorial Class, to be competed for at the November Exhibition of the N.C.S., terminable at a period consistent with the amount of the funds forthcoming."

Mr. Shea's suggestion was to this effect:—"That the form the memorial to Mr. W. Holmes should take be that of a medal or medals given triennially, after the character of the Veitch Memorial Medal."

Several subscriptions have already been promised, and all communications should be addressed to Mr. L. Castle, Hotham House, Merton, Surrey.

THE NATIONAL CHRYSANTHEMUM SOCIETY.

THE display of Chrysanthemums at the recent Westminster Show was surprising both in numbers and quality, and indicated that many plants are very early this season in flowering—rather a bad augury for the November shows. There can be no doubt that the National Society acted wisely in providing prizes at this time of year, as in previous seasons many handsome Japanese blooms have been lost before the end of October, and the date fixed (15th, 16th, and 17th inst.) was exactly suited for these.

With twenty-four Japanese blooms, not less than twelve varieties, there were fourteen competitors, Mr. C. Gibson, The Gardens, Morden Park, Mitcham, winning first honours with superb examples of Stanstead White, E. Molyneux, Mdle. Lacroix, W. Holmes, Elaine, Comte de Germiny, Peter the Great, Sunflower, Stanstead Surprise, J. Délaux, Golden Dragon, and Mrs. J. Wright. All these were beautifully fresh and of considerable size, Stanstead White being wonderfully good. Mr. J. Doughty, Cranbrook, followed closely, showing handsome flowers of G. Daniels, Madame de Sevin, Avalanche, Baronne de Prailly, and Margot. C. E. Shea, Esq., The Elms, Foots Cray, was third, having Avalanche, Etoile de Lyon, Mrs. F. Jameson, and Val d'Andorre in excellent condition. In the class for twelve Japanese blooms, distinct, eight competitors entered. Mr. C. Blick, gardener to M. R. Smith, Esq., The Warrens, Hayes Common, Kent, took the lead with fine specimens of Baronne de Prailly, G. Daniels, Val d'Andorre, E. Molyneux, Hamlet, M. Freeman, Etoile de Lyon, Avalanche, F. Marrouch, Carew Underwood, Belle Paule, and another variety. Mr. Shea was second, and Mr. W. Collins, gardener to J. W. Calile, Esq., Ashdene, Bayford, Hertford, third. For six white Japanese, one variety each, Mr. C. Cox, gardener to J. Trotter, Esq., Brickenden Grange, Hertford, was first amongst twelve competitors, showing grand, full, pure white blooms of Avalanche. Mr. C. Ritchings, gardener to W. Lindsay, Esq., Brandries, Beddington, was a close second, his blooms not being fully expanded, but in a few days they would have surpassed the others. Mr. W. Howe, gardener to H. Tate, Esq., Park Hill, Streatham Common, was third with Elaine.

At a meeting of the Floral Committee on October 15th, Mr. R. Ballantine in the chair, certificates were awarded for the following Japanese varieties:—W. H. Lincoln (Mr. E. Beckett), very handsome, bright clear yellow incurving florets, a first-rate variety; Puritan (Mr. E. Molyneux), pure white, excellent; Mrs. Falconer Jameson (Mr. Molyneux), generally known, brownish orange; Charlie Sharman (Mr. E. Beckett) rich purple, a fine variety; Annie Clibran, the pink sport from Mdle. Lacroix; and Anna Hartzhorn, a grand white variety, with incurving florets, from Mr. Davis.

EARLY FLOWERING CHRYSANTHEMUMS.

THIS season has been a bad one for the growth and perfection of the early flowering Chrysanthemums. The spring was good, inasmuch as there were not so many late frosts as usual. Then we had a fine warm May which forced some plants into bloom before their time, but after that came June, July, and August, wet and cool, with insufficient sunshine. September was a fine month for the later sorts, but it was then too late to restore the forward ones. There has also been more earwigs than usual, which, in many cases, destroyed the hearts of the shoots, causing many to be blind and crippled. The florets were so weak that the backs of the blooms faded before they were hardly open. All this told with great effect on the show at the Crystal Palace, for the plants were not equal to those of former years. There was nothing particularly noteworthy there except the appearance of a group from new exhibitors, Messrs. Reid & Bornemann of Trewsbury Road, Sydenham, S.E., who took the second prize.

The September Show of the National Chrysanthemum Society at the Aquarium, Westminster, on September 10th and 11th, was a remarkably good one. The display was extensive. For groups, Messrs. J. Laing

and Sons of Forest Hill, S.E., were first; Messrs. Reid & Bornemann of Sydenham, S.E., were second. In this exhibit was a very fine large white Japanese sort called by them "Sydenham," but there seems some doubt as to its origin, and it may be found to have another name; but if it should come as early, when not disbudded, which this plant was, it will be useful for early work. They also at this time showed a sort called *Spiralis*, which was a disbudded plant with about three flowers. There is some doubt, too, regarding this. There are two plants of the same name, and it does not seem certain if either of them is really early. Mr. N. Davis of Camberwell, London, was third. Mr. H. J. Jones, who has recently commenced business at the Ryecroft Nursery, Hither Green Lane, Lewisham, S.E., and with whom early flowering Chrysanthemums are features of importance, exhibited, not for competition, a fine group, for which he was given a silver medal, and a certificate for the new yellow Pompon Golden Shah.

The class for cut Chrysanthemums was filled with a more than usually great variety of sorts; Mr. R. Owen of Maidenhead being first with sixty sorts, among which was Miss Phyllis Broughton, exhibited for the first time, and the beautiful little white Pompon Miss Lily Stevens, for which he received a certificate. Mr. N. Davis of Camberwell was second. In this class, and exhibited for the first time, a new early sort, Mr. Harry Laing, a straight petalled magenta Japanese; and Ernest Bergman, a new crimson, both of which I have grown, but have not seen in condition to say what their value is, and it must be deferred till another season. They are both new French sorts of this season. Mr. E. F. Sueh of Maidenhead was third for cut flowers. In the class for twelve Pompons Mr. D. B. Crane, of 4, Woodview Terrace, Highgate, London, N., exhibited some flowers of Rosamundi, which I do not remember to have seen before at any early show, and if it will grow good flowers without disbudding it may be useful. I have grown one of this name this season, but it is late and evidently a difficult plant. I will grow the other next season and test its merits for myself. Of course, I do not consider because blooms of any sort can be shown in September that such a kind can be called early or semi-early, but only such as will do it without any buds being taken off, or forced in any other way except good cultivation in the open.

Though the season has been a bad one for the growth it has been a very good one for the extension of the culture in many directions. Many of those who have thought nothing of the early sorts find that it is to their benefit to grow them; but it is in the many good varieties that have come to light in this country that the season shows the most advance. We have not had to grow so many poor plants to discover good ones as we generally do, and besides there are several good English seedlings from English seed in view for next season.

Perhaps the best find of the year is P. Radaelli. This is a very beautiful early sort, blooming first in August on the crown bud, but afterwards shooting on and blooming during the following months. It will grow a flower 4 or 5 inches across without a bud being removed. It is white with a narrow reflexed petal with a rounded end. It has spare foliage, and grows to a height of 4 feet or more.

Arthur Crepey, certificated, is a very good early dwarf plant, blooming in September, perhaps another season in August. It is a primrose yellow varying to white; blooms about 3 inches across; height of plant 2 feet. It resembles Madame Desgrange, but the petals are rather broader, and the buds come naturally further apart, making it better for growing without any buds being taken off. It is of stiff habit, and can begrown without sticks. It seems to be a seedling of the above, and is likely in many places to be grown instead of Madame Desgrange.

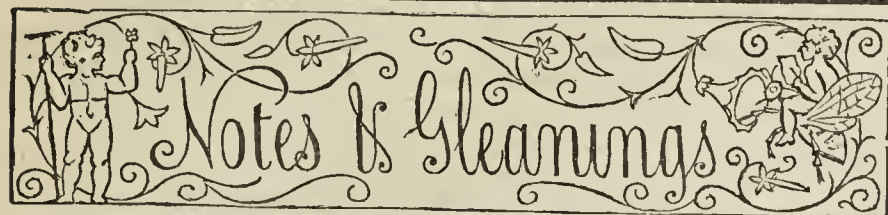
Madame Léon Collin is an entirely new form and colour among the early sorts, being a bright light bronze, Japanese in form, with narrow, twisted, and curled petals. It does well either disbudded or grown naturally. Flowers 3 to 4 inches across. Plant about 3 to 4 feet high. It is a charming addition to the early sorts, quite a new shade of colour, and has had a certificate granted to it. Blooms in September.

La Perle is a fine dwarf white, blooming at the end of September. It is a stout plant, and will come into competition with La Vierge, but while that is reflexed this is slightly incurved, has broader petals than that, and is considerably earlier. Grows 2 feet 6 inches high, with flowers 3 inches across.

There are several others which will probably come earlier another season in colours much desired—viz., crimsons, reds, and purples; but as they are not yet out (October 15th) sufficiently to be spoken of with certainty, and there are some promising novelties among them, I will try to write a little more on semi-earlies in a week or two.

Of the few new good ones of last year, I may say that Madame la Comtesse Foucher de Careil, which seemed a weak plant last season, turns out to be not so. It is a real good stout sort, being so dwarf (just over 2 feet high) that it can be grown without sticks. It is a very great acquisition because there are so few reds, which it is, and a very bright red, too. The ladies call it a terra-cotta, but it is very much lighter than a garden-pot red. It is a lighter colour than L'Amirable, besides being nearly a month earlier; in fact, there is no other like it. It stands alone as a red September reflexed Japanese beauty, and being so dwarf is excellent for front rows in decoration. As a cut flower it is striking and distinct both by day and night. It will probably be a great market sort in a season or two, both as a pot plant and for cut flowers. It has been certificated. I have one or two good seedlings from my own seed, and so has Mr. Owen from his own seed; but as they will not be sent out next season I shall reserve judgment upon them.

till then. There are other good seedlings which I will refer to in the semi-early paper.—W. PIERCY, *Beadnell Road, Forest Hill, London, S.E.*



CHRYSANTHEMUM CENTENARY.—The number of the *Journal of Horticulture* to be published on the 30th inst. will contain matter of unusual interest relating to Chrysanthemums and Chrysanthemum growers. It is desirable that early application be made for copies of this issue to avoid disappointment in the supply, as the demand is certain to be very large. Secretaries of Chrysanthemum societies will oblige by making this known among their members and friends.

— **EVENTS OF THE WEEK.**—To-day (Thursday) the Holmes' Memorial Committee have a meeting in the Royal Aquarium, Westminster at 4 P.M. At 5.30 P.M. the fourth annual dinner of the United Horticultural Benefit and Provident Society will be held in the Cannon Street Hotel, Mr. E. R. Cutler in the chair. On Monday, October 29th, the National Chrysanthemum Society's General Committee will meet at 6.30 P.M. at Anderton's Hotel, Fleet Street. The Royal Horticultural Society's Fruit, Floral, and Orchid Committees will meet in the Drill Hall, James Street, Westminster, at twelve noon on Tuesday, October 28th.

— **THE WEATHER** in the metropolitan district has given an earnest indication of autumn during the past week, not so much in low temperatures as in the dull skies and fogs. Little rain has fallen generally, but in some districts rather heavy showers have been experienced.

— **THE GUILDHALL SHOW.**—We are requested by Mr. Geo. Bunyard (who arranged for the Judges at the Guildhall Show) to say that the following most kindly acted as additional Judges at a short notice, when it was found on the Show day that the entries in Section III. were so numerous:—Messrs. Begg (Bearwood), J. Hudson (Gunnersbury), J. Laing (Forest Hill), William Paul (Waltham Cross), Arthur Turner (Slough), and John Watkins (Hereford). Other willing helpers were—Mr. Chas. Ross of Welford Park and Mr. Miller of Northdown, Margate.

— **FRUITS PRESENTED TO THE QUEEN FROM THE GUILDHALL EXHIBITION.**—We are informed that the following were omitted from the official list published in the *Journal* last week. They were amongst the most interesting contributions, and some of them were grown within five miles of the Guildhall:—The Queen Apple was sent from Mr. W. W. Bull, Bishop's Ramsden, Essex; South-Eastern Zone, class 23, Wadhurst Pippin, from A. H. Smee, Esq., The Grange, Carshalton; class 24, Ribston Pippin, from Lady Whitehead, Highfield House, Catford Bridge; Peasgood's Nonesuch, from W. Roupell, Esq., Harvey Lodge, Stratham; and Worcester Pearmain, from Mr. F. Minchener, Park House, Penge.

— **DEATH OF MR. JULIUS NIEPRASCHK.**—We have received an intimation of the death of Mr. Julius Niepraschk, the Director of the Royal Garden "Flora" at Cologne, which occurred, after a short illness, on the morning of the 14th inst. Mr. Niepraschk was well known and held in high esteem by the horticultural community throughout the world.

— **ROYAL HORTICULTURAL SOCIETY.**—We are requested by the Secretary of the Royal Horticultural Society to publish the following announcement: Mr. Morris is about to resign the post of Hon. Treasurer to the Royal Horticultural Society, which he has held for such a length of time; indeed, at a meeting of the Council on the 14th inst. he formally tendered his resignation. Mr. Morris is about to sail to the West Indies on a Government mission, and as this will necessitate his absence from England for a period of three or four months he feels that under these circumstances he could not attend to the duties of Treasurer to the R.H.S. to his entire satisfaction. During Mr. Morris's term of office he has been most energetic in bringing the financial affairs of the old Society to a satisfactory state, and that he has succeeded and his services appreciated may be seen from the following resolution, passed by the Council:—"The Council of the R.H.S., in accepting with unfeigned

regret Mr. Morris's resignation of the post of Hon. Treasurer, which he has filled with such signal success and advantage to the Society, beg to express to him their grateful sense of the value of his services, of the judgment and discretion with which he has conducted his duties, and of the devotion with which he has in every way forwarded the interests of the Society."

— **CHISWICK CONFERENCES IN 1891.**—The Council of the Royal Horticultural Society intend to hold the following Conferences at Chiswick Gardens during the year 1891—viz., July 7th, "Hardy Midsummer Flowers." July 8th, "Strawberries, Raspberries, Currants, and other Small Fruit." October 6th, "Hardy Autumn Flowers, especially Michaelmas Daisies, Perennial Sunflowers, Autumn Crocuses, &c." October 8th, "Conifers as Ornamental Trees and for Timber." The Council would be greatly obliged to anyone possessing good varieties of Michaelmas Daisies or of perennial Sunflowers if they would be kind enough to forward plants of them without delay to Mr. Barron, Superintendent R.H.S. Gardens, Chiswick, London, W., as they are very anxious to obtain a thoroughly representative collection of these charming flowers, with a view both to the selection of the best varieties and the correction of their nomenclature, which seems to be at present somewhat confused.

— **THE autumn Exhibition at the ROYAL AQUARIUM, WESTMINSTER,** last week was very satisfactory in all respects, cut flowers, fruit, and vegetables being largely shown in all the classes. In varied attractions and general interest it was one of the best yet held there.

— **MESSRS. F. SANDER & Co., St. Albans,** send us specimens of a very handsome variety of *LAPAGERIA ROSEA*, the flowers considerably larger and of more substance than usually seen, and the colour extremely rich.

— **GARDENING APPOINTMENT.**—Mr. Frederick Fulford, for the past eighteen months foreman in the gardens at Hallyburton House, Coupar Angus, Forfarshire, N.B., has been appointed head gardener to the Earl of Mayo, Palmerstown, Strattan, Co. Kildare.

— **THE meeting of the BRITISH FRUIT GROWERS' ASSOCIATION** at Westminster, on Wednesday, October 15th last, was very successful, and in some respects one of the best of this year's series. There was a good attendance of members, and Mr. G. Gordon took the chair at 5.30 P.M., opening the proceedings with a few introductory words. Mr. G. Hammond of Brentwood then read the practical and useful paper on "Apples for Market," which we published in our last issue. Considerable discussion followed, in which several important points were raised and debated. Messrs. Roupell, Cheal of Crawley, Ivatt of Cambridge, Cannell of Swanley, Luckhurst of Romford, Shea of Foots Cray, and Canham of Norwood, took part. Mr. Hammond replied generally to the various questions, and the proceedings closed with votes of thanks to Messrs. Hammond, Castle (Hon. Sec.), and Gordon (Vice-Chairman).

— **PANSIES.**—Amateurs and others will do well to look closely after aphides in the hearts of young Pansy plants before consigning them to their winter quarters. The spring and summer of 1890 will long be remembered for the plague of brown aphids, which not only played sad havoc with the blooms, but in many cases caused the destruction of the plants, and from what I hear from growers these insects are yet to be found in the plants. A decoction of tobacco water or an application of the insecticide "swift and sure," made according to printed instructions, should be prepared, and the young plants (not the roots) thoroughly washed in it. If this is done now, and they are examined through the winter, young plants can be secured in a clean healthy state for spring planting.—**AN OLD PANSY GROWER.**

— **WARE AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.**—An ordinary meeting of this Society was held on the 14th inst., the Rev. A. Lofts presiding. The membership steadily increases, and gives greater power to the Society by their influence. A capital collection of fifteen varieties of Pears was staged by Mr. R. Smith of "Presdales," Ware, and a very interesting exhibit was staged by Mr. Alexander of "Poles," Ware, in the shape of Onions in ten varieties. They were grand samples, and gave abundant evidence of the superior culture they had received. Apples and Chrysanthemums were also staged by other members. A paper was read on "Plant Stoves and their Occupants," by Mr. A. King, who treated the subject exhaustively. His remarks were followed by Mr. R. Smith and J. B. Riding, to which the essayist briefly replied. A cordial vote of thanks was passed to Mr. King for his paper.

— HORTICULTURAL CLUB.—The first dinner and conversazione for the present season took place on Tuesday evening Oct. 14th, when, notwithstanding the miserably foggy weather, there was a good attendance of members. The chair was occupied by Mr. John Lee, and there were present, amongst others, the Rev. W. Wilks, Messrs. Harry J. Veitch, Cousens, H. J. Pearson, Lindsell, Burrell, and Walker. The subject for discussion was the *Gladiolus* (hybrids of *gandavensis*), which was opened by the Rev. H. H. D'Ombraïn, who, in opposition to some recent statements, showed specimens of bulbs to illustrate the correctness of his views, while Mr. E. B. Lindsell kindly contributed some beautiful spikes of flowers to illustrate the statements made. An animated discussion followed, which was joined in by nearly all present, and an interesting and profitable evening was spent.

— THE FRUIT EXHIBITION AT THE GUILDHALL.—As mentioned last week, at the close of the Fruit Exhibition in the City, the Master of the Fruiterers' Company (Sir James Whitehead) forwarded to Her Majesty at Balmoral two cases of English grown Apples and Pears, selected from the exhibits at Guildhall, with the view of illustrating what could with intelligent cultivation be produced in different parts of England, and showing the capacity of this country for the growth of much of the hardy fruit which is now imported. He also forwarded to the Queen a copy of an essay, "Profitable Fruit Growing," by Mr. John Wright, for which work the gold medal of the Fruiterers' Company together with a prize of twenty-five guineas was awarded last year. Major Sir Flectwood Edwards, K.C.B., in acknowledging the safe arrival of the fruit, stated that some of it had already been served at Her Majesty's table, and he was commanded to convey to the Fruiterers' Company the Queen's thanks for having been kind enough to forward the fruit, with the beauty of which the Queen had been struck. Her Majesty was also obliged for the copy of Mr. Wright's essay.

— IN the 103rd annual report of the ROYAL BOTANIC GARDEN, CALCUTTA, Dr. King says that the attention of the staff during the past year was devoted chiefly to the maintenance, in as high a state of efficiency as possible, of the various departments of the garden. Special attention was given to the herbarium, and a considerable number of new species were described. The sum of 1000 rupees having been granted in order that specimens might be obtained in Burmah and Assam, Dr. King was enabled to do more than usual in these provinces. Under a recent order of the Government of India this exploration will be extended. An official document relating to Dr. King's report, and issued by the order of the Lieutenant-Governor of Bengal, contains the following passage:—"The control of Indian botanical operations has been centralised in the Calcutta Gardens, and the Superintendent has been appointed Director of the Botanical Survey of India. The grants promised by the Administrations of Burmah and Assam will enable the collections to be made on a larger scale and more continuously. As this work will constitute a separate department, it has been ordered that in future years a separate report should be submitted on the subject."

— THE twenty-eighth annual report of the Government Cinchona plantation and factory in BRITISH SIKKIM, by Dr. King, has been issued. At the end of the financial year 1889-90 the plantation consisted of 4,682,401 trees of various ages, and of a nursery stock amounting to 264,000 seedlings. The crop collected during the year amounted to 304,705 lbs. The product of the factory were 1833½ lbs. of sulphate of quinine, and 6578 lbs. of febrifuge. The whole of the quinine and the greater part of the febrifuge were manufactured by the new fusel-oil process, and as the arrangements for working this process were quite completed during the year, the old acid and alkali method of manufacture has now been definitely abandoned. An additional year's experience of the fusel oil process confirms Dr. King's previously expressed opinion of its complete success. The quinine turned out by it is of excellent appearance and great purity, in the latter respect comparing favourably with most of the brands of the drugs of European manufacture.—(*Nature*.)

— KNOWSLEY COTTAGE, the residence of Thomas Pilkington, Esq., is within easy distance of Liverpool, and is approached from the main road by a short drive banked on each side by fine specimen Rhododendrons. The house, as well as the grounds, cannot claim much pretension to elaborate effect, but from the windows the banks of Rhododendrons skirting the lawn are grand in the spring time. The houses, eleven in number, are of various designs, the first entered being an intermediate house containing good plants of *Asparagus plumosus nanus*, *Bouvardias*, *Cyperus*, *Begonias*, *Poinsettias*, *Epi-*

phyllums, *Stephanotis*, *Bougainvillea*, and good batches of those useful Ferns *Adiantum euneatum* and *Pteris serrulata cristata*, all for decorative purposes. A general plant house filled with plants incidental to such structures was next visited, and then a propagating house containing fine young *Crotons*, *Pandanus*, *Eucharis*, and *Gardenias*, all in small pots for house decoration. The Cucumber house was just planted with its winter occupants, plants clean and robust of the old Telegraph. The Peach house contains four good trees on the back wall—viz., Hale's Early, Grosse Mignonne, Barrington, and Elruge Neetarine. They are the pictures of health, Mr. Simpson having worked out most of the old wood and taken up young shoots in their place, and with good treatment at the roots has practically renewed them. In the Muscat house the Grapes were cut, but the wood was all one could wish for. The second vinery, although occupied with old Vines, contained fine bunches of Muscats, Madresfield Court, Mrs. Pince, and Alicante. The Alicante house is 80 feet long, containing seventeen Vines, and has an east aspect. Each Vine carried ten splendid bunches, large in the berry, well coloured, of the largest size, and not a faulty bunch among them, in fact all fit for exhibition. We may rest assured that when Mr. Simpson gives his opinions on the cultivation of Grapes he is well able to do it, as evidenced by the Vines under his charge. The Camellia house is 75 feet long, and contains fine plants of the best varieties planted out and well set with buds. There is also a large roomy stove containing some very choice *Crotons*, *Palms*, *Dracenas*, *Pandanus*, *Cycads*, *Eucharis*, and *Pancratiums*, the rafters of the roof being occupied with *Cissus*, *Stephanotis*, *Bougainvilleas*, and *Allamandas*. The conservatory is attached to the house, and was very gay at the time of my visit. The flower garden was effectively bedded out, particularly striking being two beds of Henry Jacoby *Pelargonium*, which does remarkably well in this part of Lancashire.—R. P. R.

SARRACENIAS.

It has often seemed strange to me that *Sarracenias* are not more popular. Perhaps some may say that they are difficult to manage, others again may say that they are not sufficiently showy, but to these excuses I answer that they are both showy and easily cultivated. Some of the species have been introduced to our gardens upwards of a hundred years, and yet how seldom do we meet with them, except in botanic gardens and a few establishments where large collections of plants are grown. A few years ago there were only about half a dozen species in cultivation, but now in addition some fine hybrids have been obtained by Messrs. Veitch & Sons of Chelsea. The great outcry at the present day is for new plants and Orchids; but if some of the new plants that are sent out annually were nearly as attractive as some of the *Sarracenias* we should not have room to complain. I have been a close observer at the great metropolitan exhibitions for this last few years, and have come to the conclusion that few new plants of really sterling merit have been sent out. If *Sarracenias* were an introduction of the present times instead of the past I am sure they would find favour with many plant-cultivators, for when well grown they are really ornamental.

Perhaps a few words on their cultivation will not be out of place to some of the readers of your Journal who may wish to give them a trial. I find that *Sarracenias* are very accommodating, not at all particular as to the house in which they grow. I grow mine through the summer in a light airy greenhouse well ventilated top and bottom, and in winter I place them in the coolest end of the stove. This is merely for my own convenience, for it is not absolutely necessary that they should be in heat in winter, as I have known some growers allow their plants to be exposed to frost for a considerable time. I have tried two or three composts for them, but what they like best is good fibry peat, chopped sphagnum, broken charcoal or potsherds, and plenty of silver sand. Some prefer potting their plants in autumn, others in spring. I prefer potting in spring before they make their spring pitchers. The pots should be washed and be filled about a quarter full with good drainage, or if large a little more drainage will be all the better; over this place a thin layer of moss, and then the potting proceeds. The crown or rhizome should be slightly elevated above the level of the pot, the plants being potted rather firmly, leaving sufficient space at the top for a good top-dressing of green sphagnum. After the plants have become sufficiently large pans are the most suitable to grow them in. In their native habitat *Sarracenias* are found growing in boggy or marshy ground, consequently they require a good amount of water both in summer and winter; in fact, they should never be allowed to become dry. The plants when growing should occupy a position near the glass and be fully exposed to the sun, for if shaded the colouring of the pitchers is not nearly so bright. It is very necessary to guard against the flies, for these intruders are very fond of the secretion produced by the pitchers when in a young state. If the flies are allowed to become entrapped in the pitchers in any quantity decomposition soon takes place, and causes the base of the pitcher to decay. I find that placing a small piece of cotton wool in the top of each pitcher, sufficiently far down to be unobserved, answers the purpose admirably.

The following are amongst the most useful and showy forms:—

S. Drummondii.—This is one of the best species grown. The pitchers

are quite erect, and from 1½ to 2 feet high, of a bright green colour, the upper part being beautifully variegated with red, green, and white.

S. Drummondii alba.—Another handsome form, differing very little from the typical species, except in the colouring at the top of the

S. flava and vars. *ornata* and *picta*.—These are all attractive forms, especially *S. flava ornata*, which produces pitchers of an enormous size, and remarkable for its bold and clear venation, which is of a dark purplish red. The flowers are large and handsome.



FIG. 41.—STAPELIA GIGANTEA. (See page 349).

pitchers; instead of being variegated, as in the last-named, it is nearly pure white.

S. Drummondii rubra.—This is very handsome, the pitchers being beautifully variegated with crimson.

S. atrosanguinea.—A strikingly beautiful variety. The pitchers are long and narrow, and of a greenish colour; the lid is heart-shaped, the lower part green, and upper part blood red with a satiny hue.

S. purpurea.—A good old species, quite hardy, and producing cup-

shaped pitchers about 6 or 8 inches long, and, as the name implies, are of a bright purple colour.

S. variolaris.—This is well worth growing, and should be in every collection. The pitchers are peculiarly hooded, growing between 1 and 2 feet long, and beautifully mottled.

S. psittacina.—Quite distinct from any of the former in habit of growth. Instead of growing erect it produces its pitchers horizontally or spreading; the pitchers are light green with crimson veining, and are curiously hooked at the end, much resembling a parrot's bill.

S. rubra.—Also well worth growing if only for its flowers, which are blood red and deliciously fragrant like Violets. The pitchers of this species are not so showy as in many of the others, from a horticultural point of view, but where a collection is grown it well deserves a place.

S. Chelsoni.—A beautiful hybrid of Messrs. Veitch's raising. It is much in the way of *S. purpurea*, which is one of the parents. The pitchers grow erect, of great substance, and very wide at the mouth, the colour being a bright red.—K.

FRUIT FARMING FOR PROFIT—A CRITIQUE.

UNDER the auspices of the British Fruit Growers' Association much information has been diffused within the last few years on the profitable cultivation of hardy fruits. Conferences have been held in some of the most important fruit growing districts and centres of fruit consumption. One good effect of these conferences is that they tend to an interchange of views between practitioners. The papers, by experienced or eminent pomologists, are conveyed into every nook and corner of the kingdom through the instrumentality of the horticultural press. Sound reliable information is thereby conveyed to many minds, and although the teaching may be that of a lifetime it does not always carry conviction, for it must not be disguised that there exists a prejudice against preachers for profit, but it is a misfortune to become so blinded by prejudice as not to at least search into the facts if they cannot see or appreciate the work that is being done in behoof of the common weal.

Before me is Mr. Bunyard's work, "Fruit Farming for Profit,"* papers read at various places, with prefixes, addendas, and illustrations, together forming a handsomely bound volume of 137 pages. In the introduction a survey is taken of foreign competition, and its bearing on British grown fruit, in which the whole thing is summed in a sentence—viz., in "Market growing for profit we shall have to grow such kinds as will pay. That is what the Yankees do, and what our colonists do—throw overboard their old ideas." But they do it in a very different manner to the old country folks. They know exactly what the consumer wants, and they set to work to meet that want. Instead of Ribston Pippins they place the glowing Northern Spy in the market, and supplant Goff's by Baldwins. They have found out that land that will grow a bushel of Crabs will grow three bushels of the choicest Apples. Yea, as Mr. Bunyard puts it, "we must have an eye to those sorts which crop freely and bear regularly. We should aim at quality and colour in dessert Apples and Pears, and weight or size in kitchen Apples," but why not aim at colour in kitchen Apples as well as weight and size? A fine looking Apple always takes the "shine" out of a sour looking one.

The author has a poor opinion of chalk as a sub-strata for fruit trees, and sandy soil is not recommended, yet a reservation is made in favour of a good depth of soil over chalk, and a brick earth sub-soil in the case of sandy soil. "Most of the land around Maidstone is on the lower greensand, and suitable for all kinds of fruit." That is a very interesting fact, as it shows the value of the fossiliferous formations to fruit growers, and equally is the further fact "that for general fruit nothing can be better than the very deep brick earth that is found in the valley overlooking the Medway from Chatham to Canterbury." In fruit growing there is nothing like a foundation. The greensand is rich in phosphates, the brick earth contains an inexhaustible supply of potash. Plums do well on the Kentish rag, indeed all fruits down to small fruits and Nuts. In the flinty lands of East Kent where the soil is rather heavy, fine Cherries and Apples are grown, and in "the heavy lands in the Weald of Kent, where there is a more or less loamy soil resting on the clay, we find some of their finest Apple orchards, the weight and colour of the fruit being remarkable." Indeed, the soil seems to team with fertility all through Kent; even "the stone slattery land in the neighbourhood of Orpington and the Crays, where it overlays and mixes with the gravel, is remarkably suitable for Pears, Apples, and Plums." Very wet land, but not flooded, will grow Black Currants, and the chalk will grow Strawberries. "The Boughton, Linton, Chart, and Sutton Hills are clothed with fruit. Well may the author say that "this fact stares us in the face—that with care and proper drainage fruit is grown" in this garden of England. Mr. Bunyard says, "As fruit succeeds in the garden while it fails in the orchard in the same soils, it appears in many cases only a matter of cultivation." That is just what makes all the difference. Some fail because the soil is bad, others through failing to drain it, all from bad cultivation, for there is not a soil in this country that will not, by drainage or other necessary improvement, grow some fruit profitably. "Soil that is naturally drained is even preferable to land that requires drainage, for obvious reasons, not the least is a saving of some £5 per acre;" but it does not necessarily follow that the naturally drained soil is as good for fruit culture as land requiring draining. Naturally drained soils are often the most unremunerative from their poverty and porosity, and the cost

in making and keeping them fertile with manure is far greater than investing in drains and opening up a mine of untold wealth. Bleak hills and uplands are to be avoided for fruit culture, and we are also advised not to plant too near a river, stream, or lake. Shelter is of such importance "that too much cannot be said. Hedges should be allowed to get up 6 to 10 feet;" but why such a ravenous earth grabber as the Wych Elm is recommended it is difficult to tell. Better far is "the fashion, and a good one, to plant the Cluster Damson." Land, it is stated, "which grew Birch, Beech, and other trees of low value," has given good results when planted with Plum, Damson, and Apple trees, Gooseberry and Currant bushes, Raspberry canes and Strawberry plants, which pay well." Then why bother with the profitless shelter? Damsons are as hardy as Sloes, and "these break the wind and screen the other trees, fruit heavily, and give a profitable return."

Manures are carefully and judiciously treated, and those are advised which are readily obtainable in the immediate neighbourhood of towns or from the coast. Wool waste, rags, fur clips, &c, sprats, London dung, shoddy, even road scrapings are laid under contribution; but the light manures are most in request, through the "readiness with which they can be placed on the land; being in bags one can be dropped here and there, and spread before the diggers." The first three are described as powerful manures or stimulants, decomposing slowly, and it is mentioned that "well-fed pigs, or sheep and lambs fed with oilcake, are a great help to free growth, and consequently good fruit." This, in "old orchards"—one more proof that poverty is at the root of decrepit trees.

A word of caution is given to those who have the means and opportunity to use a large quantity of manure when starting a plantation. Very often trees are manured at start, and when they begin fruiting, and their demands for nutriment are greatest, they are left to starve. Mr. Bunyard traces this to the too free use of stimulants in the early years, and mentions that trees forced into over-luxuriant growth have the wood unripe by winter, and it gets frozen, especially in Plums, and bough after bough has died off. The writer is "dead" on late growth. Caterpillar infestations lead thereto, that is one reason why they should not be allowed to infest the trees, "mildew sets in, and following the leafstalk to the eyes of the shoots forms canker, which eats into the boughs, and in a few years changes a smiling plantation into a miserable lot of cripples which never recover." That is another explanation of canker, which seems to thrive all the same in soils which there has been too free of stimulants, and where the trees are made do without manure; but how manures applied in July or August can act other than as stimulants to late growth it is difficult to explain, except that it is advised not to use too strong manure, which, though indefinite, qualifies everything.

Planting is treated very ably. Surface rooting is sought by planting high. "Surface roots being those that nourish fruit." It is mentioned that the chief mischief accruing to young trees arises from too deep striking of the large coarse roots, which, meeting with a badly drained or unsuitable subsoil, causes canker, and apparently healthy trees die back wholesale. Thus it seems the fruit grower has not matters all his own way, even in Kent. For all fruits planting in November is considered the best time, and though planting in holes is had recourse to to save expense, it is clearly set forth that the cultivator would be amply repaid by having all land intended for cultivation either steam cultivated or trenched.

Pruning receives a generous share of attention, and standard with half-standard fruit trees are not to receive any pruning at planting. In planting, page 19, it is recommended to "Shorten coarse roots slightly with a sharp knife, and any injured cut clean away;" but the head is not to be cut until a year after planting. There is to be, however, a thinning of the shoots if necessary, leaving from three to seven of the best situated for forming a good symmetrical head. The winter following, preferably in February, the shoots are to be cut back to five or six buds. This causes a number of shoots to push, and these in July are to be thinned, and in winter to be cut back to 6 inches. This is to be practised for a few years, when the trees begin to bear on the old wood. Practice of that kind is found necessary, "because some fruits, notably Manks Codlin, Stone's, and Lord Suffield if left uncut form a mass of fruit buds and come into bearing, and never afterwards get beyond a mop-sized head. Some Pears and Plums have the same tendency." "In planting Cherries I (Mr. Bunyard) strongly advise planters to let them stand the first year without cutting at all (except the roots, as advised for Apples)." But in planting "Plums (from the nature of their roots), if the planting is completed before Christmas, they may be pruned the first year of planting."

In the foregoing remarks on pruning the author is manifestly between two fires and knows not which way to run. Apples, Pears, Cherries, and some free-growing Plums have anything but fibrous roots on the free stock. In transplanting trees of all kinds I have invariably found that the larger their heads the more roots were lost in transplantation, and that to prune the roots, only leaving the heads entire, was to court failure. Hollies that may be thirty or more years old transplant splendidly if their heads are cut proportionately to the reduction of the roots in lifting. Old Laurels start grandly dug up with a mere stump of root if the precaution is taken to cut off the head correspondingly, but lift them never so carefully retaining the heads and they will look very seedy, mostly showing their detestation of the rude treatment by dying back considerably or collapsing altogether. The rationale of the whole thing is very simple—a tree checked in its growth by transplantation must have the balance restored between the roots and branches

* Frederick Bunyard, Week Street, Maidstone.

before it starts into growth as freely as before the transplantation. This is seen in all transplanted trees, whether evergreen or deciduous, ornamental, forest, or fruit trees—the older they are and less frequently transplanted the longer time takes to recuperate. Standard Apple and other fruit trees have bad roots compared with those on dwarfing stocks, and because a tree has few roots many branches will enable it to recuperate is to me one of those things that “no fellow can understand.” If I plant a standard Apple tree with good roots and leave it unpruned it will make some wood growth besides forming fruit buds in the first year, and in the second it will blossom, affording some fruit, if a free bearer much; if a shy or non-early bearer little or none, and on the abundance or otherwise of the crop depends the wood growth. When I plant a Cherry against a wall and do not shorten its shoots at planting or soon afterwards it forms blossom buds or spurs at almost every joint, including the terminal, and gives a plentiful crop of Cherries the following year. A Plum, Apricot, Peach, or Nectarine behaves in a different way, making growth as well as forming fruit buds; but a Pear is just as liable to get stunted as an Apple or a Cherry. Unpruned they go at once to fruit in the free early bearing varieties, and become “mop-sized,” practically useless. Mr. Bunyard is quite right in that, but labours at a disadvantage in writing for farmers. If they plant a tree it is in a hole on grass; if it bear in the second year they let it, and kill the goose that lays the golden eggs. Mr. Bunyard bravely puts an end to all that. Cut away the fruit for three years at least, and give the grower a tree that he cannot well spoil; but then our author advises the non-pruning at planting for all standard trees. “Plums, from the nature of their roots, may be pruned the first year of planting.” This is a philosophy that I can make nothing of, for if a tree has abundance of fibres it will feel the effects of lifting less than a tree will with poor roots. Trees with few roots and long shoots left unpruned are much in the same condition as Raspberry canes left their whole length at planting—evaporating their lives away instead of pushing fresh canes.

Valuable hints on pruning old and neglected trees follow, spurs not being forgotten. Chapters are devoted to Apples, Plums, Pears, Cherries, Walnuts, and Chestnuts (the “t” being left out), bush fruits, Kent Cob Nuts and Filberts, Strawberries, Rhubarb, extra fruits, packing, &c. Altogether a handy volume, full of information pertaining to hardy fruit culture, and though written evidently in the “farming” interest most of the teaching is of general application. We are told what to avoid as well as what to do to insure a profitable return on investments in fruit cultivation.

Though personally unknown to me, I take this opportunity of expressing my thanks to the author for his practical work.—G. ABBEY.



A WORD IN SEASON.

WE are to have a new Rose, Jeannie Dickson, this season; next year we are promised Margaret Dickson. Let me beseech the grower to be merciful, and not confuse our weak minds with all the members of the family. Which of us has not been inclined to use strong language about the numerous “Verdiers,” “Margottins,” and “Duchers,” &c., who have been immortalised by good, bad, and indifferent Roses?—DUCKWING.

LOCAL ROSE EXHIBITIONS AND THE AMATEUR CLASS.

MAY I venture to offer a few remarks in answer to the letter of your correspondent, “An Exhibitor,” in reference to the above-named subject? In the first place, he complains of indefiniteness respecting the word “amateur.” Surely it is clearly enough defined by the National Rose Society’s rule—viz., “That no person be allowed to compete as an amateur who sells Rose plants or Rose blooms.” This explanation of the word has, I fancy, been considered sufficiently definite by the majority of exhibitors. He next states that “there are gentlemen who grow and cultivate 2 or 3 acres of Roses,” which means that there are exhibitors who grow between 16,000 to 24,000 plants! this calculation being based on the fact that 2000 odd trees can be easily grown in a quarter of an acre. I have visited most of the amateur exhibitors’ gardens, and I am nearly certain that there is not one who grows more than 7000 odd trees (Teas and H.P.’s included), if so many. Your correspondent next complains of the unfairness of these leviathans showing against the smaller fry. But has it ever occurred when there are large classes available? If so, the exhibitor ought to be ashamed of himself for stooping so low.

If your correspondent would look at the schedules of the various Rose societies, he would see that the classes are so arranged to avoid this colliding of “whales and minnows.” And as to the question of employing labour in amateur Rose growing, I do not think for one there is very much in it, for it does not at all follow that because owing to the size of his collection an exhibitor is obliged to employ three or four men, or more, he therefore grows better Roses than one who perhaps has only one man. To my mind one can grow too many Roses. The consequence is the trees do not and cannot receive that personal supervision which a more reasonable collection obtains, therefore I do not

think your correspondent need be alarmed. If he grows a moderate collection of between 1000 and 2000 trees, and attends to them closely, he will find himself able to more than hold his own against amateurs, and very often nurserymen too, especially in Teas.—F. R. B.

I AM surprised at the letter of “An Exhibitor,” alike at his premisses, his deductions, and his conclusions. His first complaint (and it is a very old and vexed one in every society or association) is that the word “amateur” is not sufficiently defined, that “at present there seems to be no limit.” The definition as given by the National Rose Society is, “No person shall be allowed to compete as an amateur who sells Rose plants or Rose blooms, nor any person in the employ of a nurseryman.” “An Exhibitor” may not see at first how this definition hinders an amateur from growing as many Roses as he likes, but I think he would soon find out if he attempted “2 or 3 acres.” In this extent he would probably have quite 4000 or 5000 maiden Roses every year, and what is he going to do with these plants or his cutbacks when autumn comes? Is he going deliberately to burn 4000 or 5000 plants? Giving them away would involve a great deal of trouble, and if he only grows enough maidens to fill up the blanks among his cutbacks he would find supply and demand would not always fit very well, and also that he had not nearly enough maidens for show in proportion to his stock. It would be a tyrannical interference, in my opinion, to limit a man’s title to be called an amateur by the number of Roses he grows.

The next idea is that “there are gentlemen who grow and cultivate two or three acres of Roses.” I thought I knew a little of most of the leading amateurs, but I am not acquainted with these gentlemen. Mr. Budd of Bath (who has not, I fear, met with quite his usual success this year) told us in the last number of the “Rosarian’s Year Book” the extent of his Rose garden, “about an acre,” and the number of his Roses, “between 8000 and 9000, and 1500 Briar stocks,” and this, I think (though I do not grow a third of that quantity), would make about as many Roses in a given space as could be grown to perfection. I should be astonished to hear that anyone now occupying a leading position as an amateur grows more Roses than this, and should expect to find that the majority, even of those at the top of the tree, have not nearly so many. Would it surprise “An Exhibitor” to learn that the gentleman, who has certainly beaten more nurserymen than anyone else in the last six years, grows about 3000 Roses, and has no gardener? I should very much doubt, however, if it is common, as “An Exhibitor” says, for those who cultivate not more than 1000 Roses to do so without aid.

Again, is “An Exhibitor” such a novice that he does not know that it is not my lord’s gardener, with his eighteen or twenty trained assistants under him, who wins big prizes, or is looked upon at all as a dreaded rival? Why it is just the man who does do everything himself—helped by his sisters or daughters perhaps—who is likely to win the amateur trophy, to beat good nurserymen, or to make three figures in prize money. And depend upon it such a one would do it easier with less than an acre than he would with three acres of Roses. I have no doubt that the man with 1000 Roses ought to be able to show, at his best, as good a twenty-four as the man with double or treble the amount.

“An Exhibitor” asks “Is it fair for these two amateurs to compete in the same class?” “There ought to be a class, especially for large growers.” “Committees of local Rose exhibitions should ponder this,” &c. I almost feel inclined to ask him if he has even the schedule of a Rose show. I can only think of one show, Manchester, where there are not protected classes for amateurs; that is just what he desires, special classes for large growers. At the National Metropolitan Show there are no less than seven classes, each entirely protected against all the others, and almost every local show that I know of, however small, has followed the example. Why should the small grower contend against the larger when there are classes especially protected for him? I fail entirely to see that there is any grievance, and think either “An Exhibitor” must very much have misunderstood matters, or I have very much misunderstood him.—W. R. RAILLEM.

IN reply to the letter of “Exhibitor” in the last issue of the Journal upon amateur classes at local Rose shows, it would probably be conceded that if his facts could be accepted as accurate, he would have some ground for his complaint of being swamped by “gentlemen who grow and cultivate two or three acres of Roses.” But this complaint is no new thing; it crops up every few years, and is founded on the fallacy that exhibitors in the largest amateur classes grow several acres of Roses and keep an army of skilled assistants to cultivate them. There may be such growers. There may be such gardens; and truly they would form an Eldorado, a Promised Land of Roses, and it would be worth a journey of any distance to see them; but where do they exist except in the lively imagination of “Exhibitor?” Birkenhead and Darlington in the north, and Hereford, Bath, and Exeter in the west, know them not. In the south Steyning sends her Roses from twenty or thirty poles of ground, and beautiful though the gardens of Reigate may be, the two or three acres of Roses are wanting both there and at Sunningdale. Nor can diligent search discover them at Havering or Ipswich in the east, or at Berkhamstead, Bedford, or Hitchin towards the midlands. To descend from these ideal visions of many-acre Rose gardens to prosaic facts, “Exhibitor” will perhaps recollect that there were six competitors in the amateur trophy class at the July Show at the Crystal Palace of the National Rose Society, and it seems reasonable to presume that some of these two or three-acred growers will be found among them; but speaking from personal knowledge of the gardens of

three out of the six, and from what has appeared in the pages of this paper and in the "Rosarian's Year Book" as to the extent of the other three, "Exhibitor" may be assured that all the plants grown by these six amateurs would go comfortably into four acres of ground; and further, that in at least two of these gardens nothing beyond labourers' assistance is available.

Should he still doubt, my modest half acre (a liberal estimate) is freely open to his inspection, and I venture to make the same offer on behalf of the other five amateurs to whom I have referred. As to the remarks of "Exhibitor" on the qualifications of an amateur, the best definition is, I think, given by Ogilvie in the "Imperial Dictionary"—"a person attached to a particular pursuit without regard to gain." This appears to precisely define the true amateur, and so long as he conforms to the explicit rule of the National Rose Society against the sale of Rose plants or blooms it seems immaterial whether he grows half an acre or 20 acres of Roses. Most assuredly the more he increases his number the less will be his "regard to gain."—E. B. L.

PARK HOUSE, KINGSCLERE.

KINGSCLERE has associations amounting almost to national fame in its extensive and magnificent stabling, but the impressions on my mind, animated by a brief visit to this establishment, do not relate to horses but to gardening features, which, though not extensive in their ranges, are none the less interesting and enjoyable. Park House is the well-appointed seat of I. Porter, Esq., situated at the foot of the chain of Hampshire hills, which, together with the extensive expanse of corn-growing land at this season, thickly studded with neatly built ricks, makes the surrounding picture enviable in the extreme. A walk of about a mile brings one to the summit of this high elevation, from which a panoramic scene is presented not easily forgotten, the fertile and well-timbered country extending for many miles coming within view in varying and innumerable tints and scenes, and from here alone can the visitor become cognisant of the large extent of the establishment under notice.

As previously noted, gardening is not extensive in its attempt, but is exceptionally neat and well kept in every particular—lawns, gardens, and houses. On the former are flourishing specimens of handsome evergreen as well as deciduous trees, comprising *Cedrus deodara*, *Wellingtonia gigantea*, *Cupressus Lawsoniana*, *Pinus Pinsapo*, *Thuopsis dolabrata*, a good specimen Hornbeam, and Drooping Ash perfectly trained are noteworthy among many others equally beautiful; the deep green and rich colour which characterise their growth prove that the soil and situation are well chosen for their requirements. The flower beds occupy a prominent position in the front of the house, and are planted with much taste, especially a large circular one set in the enlarged gravel space by the principal entrance. This has a bold groundwork of the silvery foliaged hardy *Antennaria tomentosa*, having varied shaped devices tastefully arranged thereon. The value of such an arrangement is twofold, for a free and bold groundwork displays the coloured designs to greater advantage, and is economical as concerning the demand for tender summer plants as well as others to form the winter display. A piece of newly acquired land has been laid out for tennis courts, surrounding which are well-made gravel paths and a broad belt of shrubs for providing the requisite shelter from the winds, which descend with terrific force. This was sown with Grass seeds, and is now perfection itself to the eye and in practical utility. A costly pitch-pine structure serves as a summer house overlooking the lawn, and is fitted with a deep glass front in its entire length, the extended gable roof defying any intrusion from the sun to mar its coolness or comfort.

The glass structures are of medium size, and very conveniently arranged. Two excellent houses of recent date are devoted mainly to the culture of Orchids in mixed variety, and to flowering plants. I noticed some uncommonly fine pieces of *Dendrobium thyrsiflorum* and *D. Walkerianum*, the latter having stout and tall growths; *Dendrobiums Dalhousianum*, *Jamesianum*, *nobile*, *Wardianum*, *albo-sanguineum*, and *primulinum*, among others being similarly well grown. *Cypripediums* in variety, also *Calanthes* and *Odontoglossums* are well represented, particularly *O. Alexandræ*, of which there are numbers of vigorous plants. *Odontoglossum ornithorhynchum* was furnished with some unusually strong pendant spikes, which are much appreciated for the agreeable fragrance freely emitted. *Lælia autumnalis*, *anceps*, and *albida* showed promises of a rich display later on, and a healthy specimen *Cattleya Gaskelliana* was finely in bloom. *Vanda Amesiana* is a precocious bloomer, quite a small plant sending up a strong spike, and is much prized. One striking feature with all except recent purchases was the freedom in growth of the sphagnum moss used as a surfacing, this proving so good a grower that frequent resort has to be made to clipping, so as to keep it from encroaching on the legitimate occupants of the pots. Not a few who have witnessed this moss growth have envied Mr. Norris, the gardener, his chances of supply, because his source, though restricted, is available in the neighbourhood, and thus he has an undeniable advantage over growers dependant on the dealer, who often supply it unavoidably in a dried condition. A span-roofed structure is devoted to Grapes in mixed varieties, of which Black Hamburgh and Madresfield Court have furnished unusually good produce, and the same remarks apply to that frequently abused Grape Mrs. Pinee. Night soil has contributed largely to the excellent growth and finish of the Grapes, and an attack of red spider was never known. Tomatoes in boxes occupied the sunniest end of the house, and gave the best returns

secured in the neighbourhood, disease never venturing to put in an appearance since Mr. Norris has been in charge of the garden. Peaches, Melons, Cucumbers, and other fruits are of the best in their season, and good demands are made for decorative material for room furnishing both in pots and as cut flowers. About 200 Chrysanthemums are grown, mostly on the large bloom principle, and they promise to give a rich display later on. Several of the newer sorts are on trial, together with most of the best standard exhibition varieties.

In the vegetable garden good provision is made for a large supply of the best quality, and Peas throughout the season have been abnormally prolific, and will continue until interrupted by severe frost. One long border sheltered by a thick hedge is filled with Roses, all of the best possible kinds obtainable, each one being distinctly labelled with its proper name, a fact that lends considerable interest to the viewing or gathering of the blooms to owners and visitors alike. Espalier trained trees are found the most profitable, because better adapted to the position of the garden. Fruit would have but little chance of perfecting on tall trees against the force of the west winds, which sweep across and down over the hill, the force of which was demonstrated beyond dispute on some rows of Runner Beans, whose leaves presented a blackened aspect, almost as if cut down by frost on the windward side.

Everywhere one sees the influence of an unstinting hand, the houses and other buildings being kept in good repair by periodic attention to paint, capital well invested. Although professional duties employ a great deal of time, Mr. Porter avails himself of all spare moments to visit his garden, which to him proves a pleasant recreation, and certainly great credit is due to him in the perfect condition of his estate and kindly thought for the welfare of his employes, none of whom appreciate more fully such sentiments than his gardener, Mr. R. C. Norris, who is prompted with the best of motives in furtherance of the commands of his esteemed employer accordingly.—VISITOR.

THE HOLLYHOCK.

MR. DEAN, in his interesting notes on Hollyhocks at page 287, reminded me of a promise I made in these pages during the early part of this year—viz., to report my experience with an insecticide kindly sent for trial by Mr. Alfred Bishop. I may say it is an excellent preventive when applied double the strength recommended. It will keep the plants clean without in any way injuring their growth, which is not the case with some other insecticides I have been experimenting with it, but the application must be applied regularly and with great care. Syringing in damp weather or in the evening often causes the plants to damp in early spring, especially when not rooted; but well rooted plants seem to enjoy their bath. These were dipped carefully overhead in the preparation twice a week, the under parts of the leaves being thoroughly "caught" in this way. Plants thus treated, and with an occasional syringe during the season, have not been affected with the fungus. Thus from personal experience I can testify that if plants could be regularly treated with the preparation during the whole season we should hear very little of *Puccinia malvacearum*. The "Bordeaux mixture" is another excellent preventive; but instead of using it in the usual way, I have found it more effective when dissolving 1 oz. of softsoap in a gallon of soft water, dipping the plants in this, then dusting them with sulphate of copper bruised very fine. Sulphur used in the same way is perhaps more simple, and has the same effect; the leaves gradually wither and die, while clean healthy growths take their place. But can Hollyhocks not be grown without all this trouble? Yes. There are several growers who have no disease among their plants; but these are only reaping the reward of a hard-fought battle, and from them we hope to be favoured with a few notes through the Journal.

Although the fungus does not appear to attack the Hollyhock so virulently as it did when first introduced (it seems to have spent its energy, so to speak), it is, nevertheless, a great pest, and from my own experience I conclude that as long as Hollyhocks are grown *Puccinia malvacearum* will find its host. If the Hollyhock were the only plant affected by the fungus there might be some hope; but when we see so much of it on the Mallow family in a wild state there is, I fear, little hope of a perfect cure. Our plants might be quite clean this year, and next year we may carry it to our garden by visiting a friend's collection; or when passing the wild Mallow it might be carried on our clothes, or in some way that we cannot account for. I do not mention this to frighten beginners; on the contrary, to prepare them to use the greatest care; for although we may never be thoroughly free from this disease, yet we find Hollyhocks grown in many gardens now comparatively clean, and it is pleasing to relate that many amateurs are again growing their collections of Hollyhocks with marked success. For those who are about to commence their culture now is the time to prepare. Have the ground well trenched, well manured, and well dressed with soot and lime; then getting thoroughly pulverised with the frost it will be found in excellent condition for planting in spring. April is, perhaps, the best time

to plant, choosing a fine dry day when the ground is in condition. Clean healthy plants should, of course, only be planted. An excellent plan to secure young growth for propagation is to follow the course recommended by Mr. George Finlay some two or three years ago in the Journal—viz., to bury the old stools in clean soil in the autumn, when in spring the growths will be found coming through the soil as clean as Seakale. With cuttings or grafts such as these there is little fear of success. My esteemed friend, Mr. Oliver of Eslington Park, with whom this idea was, I believe, first introduced, sent me samples thus treated last year. These plants had no special treatment whatever; they were merely potted and kept in a clean frame by themselves until planted out at the usual time. Not a spot of fungus has been seen on these plants during the season.

Cleanliness is another important consideration. At this time of the year, when plants are being cut down, every leaf and stem ought to be carefully collected and burned. Whether fungus has been prevalent or not the greatest care ought to be exercised. We cannot always see where the germs are lurking about. Frames, too, where plants have been propagated and wintered, ought to be thoroughly washed and painted immediately the plants are cleared out. I generally add a little paraffin oil in mixing the paint. It is in frames and such places that fungi are often hidden for a time, and makes its appearance when least expected.

In a letter to hand this morning, when writing these notes, Mr. Mein, of the firm of Messrs. Stuart & Mein, Kelso, informs me that they have been very successful with Condry's fluid as a preventive of the Hollyhock fungus. I have not, however, tried this remedy myself, but as I understand this firm has been trying various experiments during the season, let us hope Mr. Mein will let us have the benefit of his experience through the Journal. I believe, also, one of their people gave a lecture on the Hollyhock recently. As I have not seen any report of it in any gardening papers, I hope this hint will be sufficient, and during the winter months others will, perhaps, take up the question. I may here state that I am preparing a list of the best exhibition Hollyhocks in cultivation at the present time, and I hope growers will, as soon as convenient, send me their lists of what they consider good exhibition sorts, taking them in their order of merit, with description of colour and raiser's name where possible. Now that the Hollyhock is receiving so much attention, it is really necessary to have a revised list of the best sorts true to name. It is very perplexing, after paying such long prices for plants, to find after growing them one variety under different names. Many of the sorts, too, are not admissible. I grow, perhaps, one of the largest collection in existence at the present time. Out of these not more than fifty varieties are admissible for exhibition. I do not, however, condemn many of the others, for as decorative plants they ought, perhaps, to find a place when true to name; but at present we shall only deal with exhibition sorts.

Will those growers to whom I have not written, and whose address I am not acquainted with, please accept this notice, and send their lists to the address as under?—GEORGE STEEL, *Heatherslaw, Cornhill-on-Tweed*.

QUEEN WASPS.

THESE troublesome fruit pests have been more than usually abundant in some localities this year, while in others but little inconvenience has been caused by them. The possible nests of next year can to a very large degree be reduced in numbers by thoroughly destroying the queens at this season, when they are searching for cosy corners wherein to pass the winter. Last year a correspondent writing on this subject advised readers having the opportunity to search among stacks of timber, which were found to be favourite winter resorts. It is an easy matter to catch and kill them now, as they will, if they have already found a place to their liking, be most likely in a stupid or sleepy condition, but quarters suitable to them may not be found in every garden. Last autumn I secured and destroyed about three dozen, and within the past month I have already killed twice that number, and still they come. In my case I have not far to seek, for the necessary daily visit to the fruit room at once reveals their whereabouts. This building was not erected for but adapted as a fruit store, and, unlike fruit rooms generally, has an unsealed stone roof, which evidently proves an attraction for these unwelcome creatures. Once admission is effected they are attracted by the window. Some conceal themselves between the frame and wall where slight spaces occur, others less concerned sleep quietly in dark corners, or suspend themselves to the rustic curtain employed for excluding light and frost.

The fact of so many queens being destroyed thus may account in some degree for our freedom from these pests among garden fruits in summer, for although no means are taken in excluding them from the vineries, not a single wasp has attempted to partake of this favourite dessert. Plums and Pears are the only outdoor fruits that have received any attention from them, and not to anything like a serious extent even among these, and it is more than probable that other gardens in

the district are affected by a similar freedom. Gardeners having any open sheds or similar buildings to that here mentioned would do well to make an occasional search now, this being a more economical mode of exterminating wasps than anything applied in summer for their prevention or destruction.—W. STRUGNELL.

ROYAL HORTICULTURAL SOCIETY.

OCTOBER 14TH.

SCIENTIFIC COMMITTEE.—Present: Mr. W. T. Thiselton Dyer in the chair, Mr. McLachlan, Mr. Morris, Dr. Oliver, Mr. Veitch, Dr. Scott, Dr. Müller, and the Rev. G. Henslow (Hon. Sec.).

Plantain Fruit.—Mr. Morris exhibited two large fruits of *Musa sapientum* var. *paradisica*, or the common Plantain, grown at Sion House. It is generally used before it is quite ripe as a vegetable in the tropics. It practically takes the place of the Potato, and is a very valuable food, especially in tropical America.

Merulius lachrymans (?).—Dr. Oliver exhibited an interesting specimen of the mycelium of some fungus which had grown between two sheets of canvas. It had spread in a radiating manner, covering a space of about 8 inches square.

Antirrhinum majus, *Monstrous*.—Mr. Henslow showed a flower of the yellow Snapdragon, with narrow ribbon-like yellow and white outgrowths from the calyx. Such enations are not uncommon from the outer surface of corollas, as in the fringed Cyclamen, Polyanthus, Gloxinia, &c.; but in the present instance they were detached from the inner surface of the calyx—i.e., by tangential chorisis.

The Fog Report.—Dr. Oliver read a report as to the scheme proposed at the preliminary meeting. A discussion followed as to the methods to be adopted, and it was suggested (1) that the Meteorological Society should be asked to lend a pump already used for the purpose of collecting fog; (2) to consult with Dr. Russell as to the construction of an absorbent apparatus; and (3) that a duplicate chamber with filters should be prepared for use at Kew. It is also proposed to re-issue circulars with an additional request as to the opacity of the fogs experienced.

VIOLAS.

SOME weeks ago I received from Messrs. Dobbie & Co., Rothsay, a box of Viola blooms, and amongst them were several which some of your readers will probably be glad to know something about, so I give a short description of each. Mrs. H. Bellamy is a rich violet purple with lilac-clouded top petals, and of fine form. Evelyn is an improved Duchess of Albany, brighter in colour and of fine form. Ariel has pale blue lilac top petals, the side and lower petals are white clouded with blue, a distinct variety. Glow is of a rosy-lilac ground colour, striped and marked with deep maroon, and distinct. Ada Adair, of a pinkish lilac colour with dark blotch, good. Queen of Scots, marked like the Countess of Kintore, but brighter in colour, and a beautiful variety. Rosebud, a pretty variety, closely resembling Ethel Baxter in colour and marking, the latter especially, a beautiful and distinct variety. Ardwell Gem, pale primrose, and a very free blooming and effective bedder. Delicata, white flushed with lilac, with darker markings. Joy, blush white tinted with lavender, with a purple belting on top petals. Acme, very much like Cliveden Purple, and no improvement on that variety. Topsy, rich dark violet purple. Ebor, rosy purple, of good form. Champion, a well-known old white variety. Lady Macdonald, white with dark markings in the centre of the flower. Bullion, deep yellow, a first-class variety. Daldowie Yellow, same shade of colour as Bullion. Lucy Ashton, bearing a close resemblance to Columbine, an old variety; white, with a broad margin of bright rosy lilac, very pretty. Royalty, yellow, with large dark markings. Sovereign, gold, with large dark markings. Lord Elcho, golden yellow, with dark markings. The Bride, white, with blue markings. Rosetta, an improved Mrs. Baxter, rich violet purple, with lighter coloured top petals. Mina Baxter, similar in colour and marking to The Mearns; the latter variety one of our best and most beautiful varieties, rosy purple, with lighter top petals. Crimson King, rosy purple colour, and of good form. Magpie, an old, well-known variety. Neptune, rich purple, with lighter top petals, style of Lady Amory, and not so fine a variety. Souvenir, pale blue, and worthless compared with others.

Many of these varieties I have grown, and it is scarcely possible to say too much in favour of these lovely hardy decorative plants, so rapidly rising in favour. As spring and summer decorative plants they stand boldly out amongst all others, and we now possess such excellent kinds in the Countess of Hopetoun, white without any markings whatever, and of dwarf sturly habit; True Blue, by far the best blue Viola known; Ardwell Gem, primrose yellow; Bessie Clarke, pale mauve; Bullion, deep yellow; Countess of Kintore, greyish purple, with large white blotch in each petal, everybody's favourite; Duchess of Albany, beautiful shaded mauve and lilac; Lady Amory and The Mearns, already alluded to, two very beautiful varieties; Marchioness of Tweedale, pure white; Sir Joseph Terry, very dwarf, rich black purple; Skylark, also Blue Cloud, both white, with a margin of azure blue; and Mrs. Gray, white, often flushed with lilac, a very fine blooming and fragrant variety for large masses. These are a few leading varieties, but there are many others of considerable beauty. I have not mentioned my collection, which comprises over sixty of the best selected varieties in cultivation, and amongst them are some very beautiful new varieties,

now being sent out from here for the first time, which will make their mark.

Either by themselves, or mixed with variegated-leaved Pelargoniums, or other plants, taking care to have pleasing contrasts of colour, Violas can be used to any extent; and they begin flowering in April and last until September and later.—W. DEAN, *Sparkhill, Birmingham*.

GOLD AND SILVER FERNS.

AMONG the numerous handsome Ferns which now have a place in our houses, few are more generally admired than the Gold and Silver Ferns, as the species and varieties of *Gymnogramma* are appropriately designated. Having elegantly divided fronds, usually dark green on the upper surface, and plentifully sprinkled with a yellow or whitish powder beneath, being easily and quickly grown and readily propagated by means of spores, the plants possess ample merits to entitle them to popularity. It is therefore scarcely necessary to say much in their favour by way of inducing more extensive cultivation, for there are few lovers of Ferns who do not include in the smallest collections some specimens of these attractive plants. However, as there may be some who are unaware how easy it is to obtain such Ferns in good condition, a few remarks upon the treatment that I have found to suit them will possibly be of some utility.

Gymnogrammas are chiefly natives of tropical regions, the forms in cultivation being from the West Indian Islands and South America. One of their most important requirements is therefore a stove temperature, or such as is provided for tropical Ferns where a separate structure is devoted to them. During winter this should not be allowed to fall below 50° Fahrenheit, a range of 10° upwards being permitted; but too high a temperature at that time of year is inadvisable, as it tends to cause a weakened immature growth. In the summer the maximum should be about 80°. They need more exposure to light than many Ferns, the sunny side of a fernery or a slightly shaded position in an ordinary stove suiting them admirably. Abundance of water is required whilst they are growing and during hot weather, but as they are most impatient of any approach to stagnation the composition of the soil and the drainage must be carefully attended to. A compost of fibrous peat, light loam, abundance of sand with some small pieces of charcoal well incorporated, constitute a good soil, encouraging vigorous and healthy growth. The drainage should be regulated according to the size of the pot, placing the large potsherds at the bottom of the pot concave side downwards, filling up to the necessary height with small pieces and covering with a layer of moss. Upon this some of the compost described above can be placed and the plant potted rather firmly, allowing a moderate space from the rim of the pot to the soil to facilitate the supply of water. In some of the varieties the fronds are long and heavy with rather weak stems, necessitating the employment of a few light thin stakes, to which the fronds must be secured, or they are liable to be broken. Another point that needs attention is to avoid wetting the fronds, as the delicate silver and gold farina is quickly washed off and the chief beauty of the plants destroyed. This is one inconvenience that attends the introduction of *Gymnogrammas* into a plant stove, as unless they can be allotted a position where they will not suffer from the frequent syringing required for the other plants their appearance is never very satisfactory.

Gold and Silver Ferns are most readily increased by spores, as these germinate in a few weeks; in fact, they are some of the quickest to germinate of the whole family of Ferns. The best mode of effecting this increase is to remove the fertile fronds from the plant before the spores are fully mature, placing them in a dry warm house until they are ripe. Shallow pots or pans should be prepared by thorough drainage, upon which there should be placed a layer of sphagnum, filling up with very finely sifted loam and sand; and if the former has been baked it is better, though so much care is not needed with these as with more delicate or longer-germinating Ferns. It is one of the peculiarities of the genus that the young plants produced in this way are extremely variable both in the form of the fronds and the colour of the meal or farina, and it is owing to this circumstance that many forms, varieties, and probable hybrids have been obtained.

The following will be found a good selection:—*Gold*: *G. chrysophylla*, *G. Lauchiana*, *G. L'Herminieri*, *G. Martensii*, *G. decomposita*, and *G. sulphurea*. *Silver*: *G. Calomelanos*, *G. tartarea*, *G. peruviana* and var. *argyrophylla*, *G. pulchella*, and *G. Pearcei*.—C.

BERBERISES.

BERBERISES yield to no other shrubs in beauty, whether we regard the foliage, habit, or flowering properties. The foliage is peculiar in shape, of a bright glossy green; the habit is compact, and the flowers produced in profusion, of a beautiful yellow colour, and are followed by berries which make the plants handsome for a long period.

The common Berberry (*Berberis vulgaris*), is a native of this country, and is found in hedgerows and on wooded hills, where its fruit has refreshed many a rustic's palate. The flowers are produced in yellow racemes in April and May, are offensive to the smell if closely approached, but at a short distance their fragrance is very grateful. There is something very singular about fertilisation in a Berberry flower. The stamens are bent back to each

petal, the concave tips of the petals sheltering the anthers. Watch a bee come and plant its proboscis into the flower, sipping the nectar from the bottom of the cup where the filaments join the ovary; and immediately any filament is touched near the ovary, the stamen springs from the petal and shakes the pollen on the stigma. A pin or hair similarly brought into contact with the lower part of the filaments next the ovary produces the same result, but no shaking of the branch, nor any pinching or touching of any part of the flowers exteriorly, has any effect on this irritable flower. The fruit, about the size of a pea, succeeds the flowers, and when ripe makes an excellent preserve if one quart of fruit be boiled along with 1 lb. of loaf sugar. In its raw state the fruit is cooling and agreeably acid, and its juice is used for flavouring sweets, and in a dry state for making sugar plums. The bark of the tree is used even now as a cure for jaundice and affections of the liver.

Berberis vulgaris, and its several varieties—viz., *violacea*, *alba*, *nigra*, *lutea*, and *purpurea*, all named after the colour of their fruit, thrive in almost all soils and situations; but deep rich sandy loam suits them best, and an open sunny site or aspect is necessary to secure fruit. In woods, however, where the shrubs receive a moderate amount of light without much sun, I have seen them plentifully producing fruit, which seems to be well relished by some of the feathered tribe. As we begrudge a few Cherries and Strawberries for the songsters' invaluable nine-months picking of grubs out of our gardens, is it asking too much to request that a few Berberry shrubs be planted in the woods? They are an excellent cover for game. Nevertheless, their fruit grown in shade is never so highly flavoured as when exposed to sun heat, light, and air; therefore I by no means recommend planting Berberries in woods in hopes of obtaining their berries to increase the novelty of the dessert, and fill the preserve-jars in the store-room. Still the fragrance of the flowers imparts a charm to the woodlands in spring, and may help to keep the songsters from the netted Cherries.

As a hedge plant the Berberry has a few points to recommend it. It will bear any amount of cutting, grows rapidly and close, and is rather rough to face, its short prickles or spines not being pleasant. It is not so good, however, as a Quickset (Thorn) hedge, and at the very best is but a second-rate hedge plant. Irrespective of its claims as a hedge plant, in which respect it ranks with the Privet, it will be admitted on all hands that the Berberry is a highly ornamental shrub, whether planted in large shrubberies or by the side of woodland walks. Besides its peculiarly ornamental character it is of easy culture, requiring but little care after first planting.

Berberies may be best treated of in two classes—the deciduous and the evergreen.

DECIDUOUS SPECIES.—Of these *Berberis vulgaris* is the type. They are suitable for woods, where they form, as mentioned before, a capital cover for game, and for large shrubbery borders; but they are not suitable for planting in groups on lawns, for there plants should be as ornamental in winter, for the most part, as in summer, and this the deciduous character of the Berberries in a great measure prevents.

In planting them in shrubberies, it is necessary that the ground should be trenched deeply without turning up too much of a clay subsoil; and if that be wet, drains should be cut 4 feet deep and 21 feet apart, with a suitable fall and outlet. If the ground be poor, a liberal dressing of manure or leaf mould will contribute much to the prosperity of the shrubs; and a barrowful of fine, but not very rich, soil put a little under, around, and on the roots at the time of planting will materially assist the plants to form fibres and roots, and give them a start.

Half the height which any shrub attains is the proper distance to plant from a walk, and its full height the distance from plant to plant in the shrubbery. Most shrubberies, however, are faced with some of the undershrubs, or lower-growing kinds; consequently the taller kinds may be planted at a greater distance from the walk, so as to allow of those of low growth being planted in front of the border, so that, even when of full size, they will not need cutting back or clipping to prevent their encroaching on the path or space beyond their limits. Every tree or shrub should be planted at such a distance that it will never be made by crowding to assume an appearance contrary to its natural habits.

Were I forming a shrubbery I would have no duplicates in it, for no beauty can be pleasing unless it be varied. Shrubberies of the present time have no beauty beyond that seen at first sight, for such are mostly composed of the commonest shrubs purchasable, and have nothing to recommend them beyond cheapness, which is not commensurate with the interest lost. Were no duplicates admitted the shrubbery would afford an interesting field for study at all seasons, and take hours instead of minutes to inspect before all its beauties could be noticed.

I would distribute shrubs in mixed shrubberies, so as to present a good face to the eye; but, at the same time, with a variable yet harmonious aspect. But were the place large I would plant each natural order in groups, after the style of an arboretum; and with a view to this I would place the *Berberidæ* in the foremost rank. A group of *Berberis* on a lawn would be a beautiful object in May when our flower gardens are little better than fallow fields, and highly ornamental in autumn from the effect produced by their berries. Disposed of in that way, I should plant the deciduous kinds in the centre of the group and the evergreens chiefly around them, always taking into consideration the height of each species and their character of growth. I should not plant a straggling grower in front, but put it behind a compact grower.

In planting, however, ideas vary. Some would object to planting deciduous shrubs and evergreens together in groups, and it certainly detracts much from the beauties of evergreens when they adjoin deciduous trees, especially when seen on the same level with them. Therefore I would only employ evergreen *Berberis* for groups on lawns, unless I were forming an arboretum, when I might plant the deciduous and evergreen together.

Propagation.—Seeds of the common varieties, deciduous and evergreen, may be sown in sandy loam in the open ground on nursery beds in March or April, covering them with fine soil about half an inch deep; but seeds of the evergreen species, as *Berberis Fortunei*, *nepalensis*, should be protected in a cold frame until the seedlings are fairly up, and when of sufficient size to handle transplanted into nursery beds, and afterwards further transplanted annually or biennially, allowing more room each time between the plants, until they are of sufficient size to plant out finally. Seedlings are such a long time before they flower compared with plants raised from layers, division of the root or suckers, that it is not a very advisable method of propagation.—G.

(To be continued.)

THE NORTH AMERICAN FORESTS.

THE visitor from Europe is particularly surprised at the extraordinarily long and numerous wooden structures which the railway train sets to vibrating in crossing the watercourses. In America the streams retain a freedom of movement of which they make full use; one year here, another there. From high mountains the bed of a stream looks like a broad white band of water and gravel banks, with green, wooded islands between.

Streams are a good indication of the state of cultivation of the surrounding country. Those which from year to year discharge their clear water into the sea, and through the year scarcely vary in their water-level, come from an undisturbed woodland. Their banks are held fast by the roots of the trees in the region of the headwaters, and in the mountains the water gathers slowly from the woods. Such streams one sees now for the most part in uninhabited regions only; in the island of Hokaido, in northern Japan, for example, I have found such.

Streams which during the rainy season or during the season of melting snow flow turbid, and during the rest of the time clear, showing in ordinary weather small variations in their water-level, rise in woodlands, and flow through arable land, part of the soil of whose roads and fields the rains wash into the streams. Of this kind are the streams of Germany and France.

Finally, streams which year by year flow with turbid water, or which, at least, through the rainy season rush through the cultivated plains to the sea with swollen floods, here carrying away soil, there heaping up gravel banks, come from an up-country in which the forest is almost entirely wanting, or the deforesting is under full headway. Such streams one sees, for example, in Ceylon, where the English, with plantations of Tea, of Coffee and of *Cinchona*, have begun the destruction of the forests and the woodlands of the mountains. Such streams are numerous in Japan, Spain, and northern Italy. There the streams are feared whenever it rains a few days longer than usual. The American streams approach this stage. In their unrestrained impetuosity they vie with each other in bringing ruin upon their bottom lands, which, as a rule, contain the best soil. That a change must have taken place in a river is clear when during the rainy season it undermines its banks covered with trees that have stood for centuries, and finally sweeps them away in its floods. Instances of this are numerous in America, and speak plainly to everyone who can and will see, more plainly than all the books upon the influence of the deforesting of the mountains and the plains upon the water-level of streams. The deforesting of the Adirondacks through fire and in useless attempts to take the mountains for agriculture, causes a perceptible change in the water-level of the Hudson, which during the dryness of the season is fed with the moisture of the earth in the Adirondacks. Formerly Peekskill was a water station of the New York Central and Hudson River Railroad. This station had to be abandoned because during the dry season the salt water forces itself as high up the stream as Tivoli, and salt water is unsuitable for feeding locomotives.

Although the American engineer is familiar with the increasing variation in the level of the streams, one sees but few efforts to regulate their flow, which, indeed, would involve a mere waste of money, as

long as the average level of high water is yearly becoming higher. Moreover, many look upon the deforesting of the mountains with indifference, because they believe that the forest, with its beneficent influence, can be replaced upon a magnificent plan. Their idea is to fill enormous reservoirs with water during the rainy season, and then to permit the contents to flow throughout the cultivated lands. But for the filling of such reservoirs a considerable surface of soil which may collect the rain is necessary. It is to be hoped that the rain will be so gracious as always to fall with due regard for human safety, for the breaking of the reservoirs might have worse consequences than a cloud burst. To me it seems much safer that the great amount of money which permanent water works would require should be utilised in buying up the mountain lands and preserving their forests. This would be good policy even without taking into account the fact that these national reservoirs bring in money, while the artificial ones only swallow it up.

In spite of the outrageous management of the forest everywhere in the United States, I am inclined to believe that, partly of itself, partly with some little help, it will return to its beneficent condition, if in the future it should be possible to preserve it from fire. Danger from fire in the forests in the civilised parts of Europe has become a rare thing; at the least fire everyone hastens to put it out, and the Government has power to compel all to help.

In India the number of forest fires is lessened yearly, thanks to the energetic measures of the Government and the watchfulness of an efficient body of foresters, while young growth springs up on the protected plains.

In Japan, a smaller country, fire and axe have already nearly completed the work of destruction. The brave nation is labouring with the utmost zeal and with great outlay of money for the restoration of the forest on the shrub-covered mountain slopes, and for the preservation of what still remains.

In North America the practice of burning forests has become customary, even in cases in which it is entirely without reason. How can anything else be expected from the descendants of a nation that has no forest, and therefore knows nothing of the blessings of a forest? Closer study of the causes of the burning of the forests forms an instructive, if not an edifying chapter. We see what man can bring to pass in a country of such highly vaunted elbow room, in a country where the most complete individual liberty seems to be the chief principle, in a country whose laws for forest-protection are empty threats, because the ignorant and unprincipled cannot be compelled to obey them.

According to the report of Professor Sargent, 1,000,000 acres of forest were burned in a single year (1879-80), and with it 20,000,000 dollars' worth of property was destroyed. The causes of these fires have been ascertained as follows:—197 fires resulted from burning over pasture lands; in 1152 cases fires started in making forest clearings; 508 started from locomotive sparks; 628 from hunters' fires; 72 from camp fires; 35 from pipes and cigars; 12 from prairie fires; 9 from charcoal burning; 32 from lightning; 56 were kindled by Indians; 10 by lumbermen; 2 by tourists; 262 were kindled maliciously; in 2 cases fire is said to have been started by spontaneous combustion; 3 times woodcutters and 3 times unknown carelessness set the fire. This makes a total of 2983 cases.

Let us examine further the fires started maliciously and those caused by locomotives, hunters, and campers out, 1470 in all. The injury that the railway does to the forest interests is very serious. One who travels to-day in North America must grow accustomed to the charcoal heaps on both sides of the railway, if he would have any pleasure from the beauty of the landscape. From the railway the fire has encroached for countless miles upon the forest. Upon the oldest railways the danger of fire is reduced yearly by constant burning of the trees from the clearing on both sides of the road bed. Upon such clearings it would be an easy thing to cut off the fire from the forest with a safety ditch. It appears to me that there is no other expedient than to make a cleared belt along the tracks as soon as possible. At all events, this does more good than the spark arresters which the law prescribes, since, in spite of laws, the locomotives run without them.

A characteristic result of the boundless freedom of the individual at the cost of the people is presented in those cases in which hunters and tourists camping or travelling in the forest cause the fires. In the year 1880 they kindled 700. As far as my experience in western America extends, the sportsmen are careful to burn the under brush, which in the primeval forest contains generations of future forest trees, in order that they may be less hindered in their aim. In other regions the woods are fired in order that the game throughout particular districts may be driven together. Comment on this is quite unnecessary. Forest thieves, too, start fires, especially in the Government forests, in order to obliterate the traces of their theft.

With reference to the Yellowstone Park, the possession and the pride of the whole nation, H. Winsor says in his "Guide for Tourists":—

"It is to be deeply deplored that because of the carelessness of campers out, many of them cultivated people, vast stretches of forest have been destroyed by fire. The fires have resulted from neglect of the simplest precautions as to camp fires. In consequence of this it is not at all unusual to be obliged to ride in the park for miles and miles between black tree stumps instead of in the refreshing shade of the green forest. This thoughtless destruction of the forest should be checked by severe punishment of the offenders."

It should be provided by law that anyone who causes a fire shall be held for the injury done, and the amount of damages should be equal to the value of the woodland destroyed. But the injury done to the

forests by overthrowing confidence in the security of forest property, by discouraging the investment of money in forest, by the destruction of the young growth, and by the effect upon the fertility of the soil, would still remain without mitigation.—(From "*The Forests of North America*," by Dr. Heinrich Mayr.)



FRUIT FORCING.

VINES.—Early Houses.—Where late Grapes are not cultivated in quantity to maintain a supply to May, preparations must be made for early forcing. The Vines being pruned in September, the loose bark stripped off, the house may be cleansed, the border top-dressed, and the Vines dressed with a solution of softsoap, half a pound to a gallon of water, brought to the consistency of cream with flowers of sulphur, adding, if there be any scale, a wineglassful of spirits of turpentine, the composition being equally effective against mealy bug, killing all it touches. The whole being in readiness as advised in former calendars, cover the outside border with leaves and stable litter, so as to warm the border preparatory to employing fire heat. If there be the convenience for making up a good bed inside the house of Oak or Beech leaves, with about a third of stable litter, it will greatly facilitate the Vines breaking, and be more beneficial to them than fire heat alone. Therefore have them in readiness for placing in the house at the early part of next month.

Early Forced Vines in Pots.—These are much better than permanently planted Vines for very early forcing, say to afford ripe fruit late in March or early in April, selecting early varieties such as Buckland Sweetwater, Foster's Seedling, and White Frontignan in white Grapes, and of black, Black Hamburgs, Mill Hill Hamburg, Royal Ascot, and Madresfield Court. They should now be in position preparatory to starting early in next month.

Renovating Vine Borders.—Vines thrive for an almost indefinite period in a soil suited to their requirements, and where they have a good extent of rooting area, as may be seen in many places where the Vines were originally planted to cover a large area. Vines mostly have their roots confined to limited areas, and the natural outcome is that the soil becomes less favourable as a rooting medium if not defective in aliment, hence the desirability of renewing the soil, or such portion of it as will secure as many active feeders as possible. There is nothing perhaps equal to fresh soil as an encourager of Vine roots.

Where Vines are unsatisfactory, no time should be lost as soon as the leaves have effected their functions to the extent of perfecting the buds and wood, and whilst they are still upon the Vines, in removing the soil down to the roots and picking it from amongst them, so as to displace as much of it as possible with fresh. In case the border is very unsatisfactory, and the roots few and deep, it will be necessary to remove all the soil and renew the whole border, commencing with the drainage, which should be clear 9 inches to 1 foot thick, having a layer of fine material at the top, nothing answering better than old mortar rubbish 3 inches thick over 9 inches of drainage. The drainage must have a tile drain to carry off superfluous water. Two feet depth of soil is ample, and the roots should be laid out evenly in the top foot, encouraging those from the collar by laying any that proceed therefrom only just beneath the surface. The whole should be made firm, and the compost moderately dry. If the roots are inside and outside, one part may be done one year, and the other the next without any danger of loss of crop, care being taken to preserve the roots, and to keep them from the drying influences of the atmosphere, whilst the growth is in progress. Mulch the surface with a little short manure, preferably fresh horse droppings, and cover outside borders with a good thickness of leaves or other protective material. As regards soil, good turfy loam is best, but any ameliorated soil will grow good Grapes. Preference should be given to medium textured loam, that overlying clay being better than that overlying sand. The most suitable is a rather strong loam overlying the limestone formation, and interspersed with flints.

THE FLOWER GARDEN.

State of the Flower Beds.—It is not often the beds present so gay an appearance during September and the early part of October as they have done this season. Only in very low positions have early frosts crippled the most tender plants, and the bright state of many of the beds, though very satisfactory in some respects, will greatly hinder the work of refilling for the winter. Advantage ought to be taken of a dry time for breaking up any of the beds not in an attractive state, refilling these with hardy flowering plants, shrubs, and bulbs, before rain falls on the newly disturbed soil and thereby quickly render it too sodden to work on. In some instances it may be advisable to dig the beds prior to refilling; poorer soils where possible being enriched by well decayed manure, but those of a heavy retentive nature frequently work more

freely and remain in a drier warmer state when not dug, the surface being merely cleared of rubbish, and the planting at once proceeded with.

Spring Flowering Plants.—The best display is made by plants established long before this in their flowering quarters; but if Wall-flowers, Forget-me-nots, Daisies, Polyanthus, Primroses, Violas, Saxifrages, Aubrietias, and Arabises, and such annuals as *Collinsia bicolor*, *Limnanthes Douglassi*, *Gypsophila elegans*, *Nemophila insignis*, *Silenes*, *Saponaria calabrica*, and *Virginian Stocks* have been well prepared, they transplant readily. This season they are exceptionally strong and healthy, and the sooner they are in the winter quarters the greater the likelihood of their doing well. In many districts the ground is in a comparatively dry state, and nothing therefore should be moved till the soil about the roots has been well moistened, one or two good waterings being given overnight. All ought to be lifted with a good ball of soil about the roots and carried in flat baskets or on hand-barrows to where they are required. Thin planting and mixtures are not recommended, masses of one or two colours arranged according to the known height of the respective kinds being most effective. Very few, if any, of the plants will increase in size before flowering time, and many will lose their outer leaves, consequently becoming smaller than when first put out. If therefore there are not enough to fill all the beds thickly do a limited number well, and cover the remainder with shrubs rooted, or branches and sprays only, with flowering bulbs among them. It is of the greatest importance that all the plants be firmly refixed, this causing them to become quickly re-established; frosts also being liable to upheave them considerably.

Spring-flowering Bulbs.—Old bulbs cannot be depended upon to flower freely, much the best effect being produced with the aid of a newly purchased stock. Luckily Hyacinths, Narcissi, Tulips, Crocuses, Scillas, and Snowdrops suitable for bedding out can all be bought at a comparatively cheap rate, and these should be put out in the beds, the choicer kinds and varieties being planted in herbaceous and other borders, where, if not often disturbed, some of them, notably Daffodils and Narcissi, will continue to increase and improve every season. Nor ought the bedding bulbs to be put out very thinly, or they will present a meagre appearance; and central masses of either Hyacinths, Narcissi, or Tulips, with broad bands of dwarfier kinds, are much preferable to mixtures. Plant Hyacinths and Narcissi about 9 inches apart each way and 4 inches deep, Tulips going in the same depth, and not more than 6 inches apart. Triple lines or bands of Crocuses, Snowdrops, and Scillas are recommended, the bulbs being placed out from 3 inches to 4 inches apart each way, and 3 inches deep. Beds largely or wholly filled with bulbs might well have a temporary covering of sprays of such evergreens as Hollies, Box, Ivies, Aucuba, Portugal Laurel, common Laurel, and short pieces of Conifers, these being grouped and stuck in thickly, so as to resemble small plants. They will long retain their freshness.

Shrubs and Conifers in Beds.—The outlay in the first instance would be considerable, but there is no mistaking the value of various shrubs and Conifers for furnishing beds, borders, large vases, and window boxes during the winter. They can be had of any size, ranging from 6 inches to 6 feet in height; they move readily (beingspecially prepared for the purpose), and a beautiful and lasting effect is created in a few hours. Many of the Golden and Silver forms are quite bright enough for the summer arrangements, while all can be moved in May to the home nursery, and brought back to the beds in the autumn. Neat little specimens look well in a carpeting of dwarf flowering or coloured-foliaged plants, and mixtures also are effective. Quite small plants, however, ought to be in masses of one kind, or panels may be formed of different colours, with dividing lines of other species.

Selections of Conifers and Shrubs.—A visit to a good nursery would disclose the fact that there are numbers of plants admirably suited to the purpose of filling flower beds, foremost among these being such handsome Conifers as *Cupressus Lawsoniana erecta viridis*, *lutea* and *nana glauca*; *Cupressus nutkaensis*; *Cryptomeria elegans*; *Juniperus tamariscifolia*, *Retinosporas ericoides*, *obtusula aurea*, *nana*, *plumosa argentea*, *squarrosa* and *plumosa aurea*; *Taxus baccata elegantissima*, and *Thuopsis dolabrata*. Quite dwarf plants can be had of any of these. Some of the most useful evergreens are variegated Hollies in variety; gold and silver variegated Box; gold and silver variegated Tree Ivy; *Euonymus radicans variegata*; Aucubas, *Mahonia aquifolia*, and the Myrtle-leaved Portugal Laurel. With these may be associated such flowering shrubs as *Andromeda floribunda*, *Ligustrum japonicum*, *Rhododendrons daphnoides*, *myrtifolium ovatum* and *Wilsoni*, herbaceous Ericas, and *Kalmia latifolia*. Berried plants of *Skimmia japonica*, the beautiful *Pernettyas* and *Cotoneaster microphylla* are also effective. Nor must the graceful *Yucca recurva* be omitted, and much also might be done with a few clumps of *Iris foetidissima variegata*, and which divide readily. Old plants of *Golden Pyrethrum*, *Stachys lanata*, *Golden Thyme* can be used up again, and small Beet will usually pass through a winter without being greatly disfigured.

VIOLETS IN THE FLOWER GARDEN.—A few rows or small beds filled now with strong plants of Russian Violets would most probably afford much pleasure to the owners. Showy they would not be at any time, but they would be handy for gathering from, and only a few flowers serve to scent the air near them. The Neapolitan forms, notably *Marie Louise*, will frequently survive the winter on raised beds, and these are quite showy in the spring.

THE BEE-KEEPER.

APIARIAN NOTES.

BEGINNERS' FIRST HIVES.

MANY people I know have this year commenced bee-keeping. Premising that attention has been given that each hive has not less than 20 lbs. of stores (better if it be 40 lbs.), and the bees occupying a hive large enough to allow space for the breeding powers of the queen, and that she be young and fertile, the beginner may rest assured that all will be well, and there will be no lack of bees within their hives when the spring arrives.

THE EVIL EFFECTS OF DAMP.

Some have perhaps been feeding their bees. Now when bees are being fed the syrup ought to be much thinner than when the bees have it sealed for the purpose of enabling them to take it up rapidly, as thick syrup or thick honey is taken up very slowly. The right proportion is about equal weights of sugar and water, that proportion being much thinner, but better than is sometimes recommended, and the bees should rather expel the superfluous water than be necessitated to go outside in search of it to liquify the thick syrup. Expelling the superfluous water creates a damp inside the hive, particularly in the extreme angles, and upon the floor, which, if not removed, causes mould upon the combs, and induces the honey to ferment. At the same time it is slowly, but surely, extracting the heat from the bees and the hive, causing the bees to be restless, and consume more food than can be properly digested. The bee often becomes powerless and dies.

THE BEST WAY TO PRESERVE BEES.

Keep them dry and free from draughts, so that no more heat is necessary to keep them alive than what the bees generate of themselves. Repeatedly I have had clusters of bees living between the outer wrapping and the dried grass covering the hive at the end of ten days. The longer bees can be sustained without feeding, and the less of it, the healthier will they be, and of course when extra meat is taken the reverse will be the case. The whole sanitation of the hive may be summed up as follows:—To have bees sufficient in number to be able to carry on the internal economy of the hive successfully without the brood nest suffering when a portion of the bees are abroad collecting water or pollen, or from any sudden atmospheric changes that may take place, and these bees located in a hive receptacle large enough for the demands of a prolific queen and an increasing population so provisioned that imminent want is never feared or known, and entirely free from draught or moisture. I have repeated the above so as to impress beginners with its importance.

If any beginner has been feeding his bees let him examine the interior of the hive, and he will at once see the moisture as described. Transfer bees and combs into a clean dry hive and the evils will to a great extent be averted, but not wholly, because as the bees consume more food during the winter if the hive is a non-ventilating one.

Water is condensed upon the extreme angles and floor of the hive, and the bees suffer in proportion. If an enamelled cloth lie close upon the top of the frames of a conducting nature condenses the vapour, which falls back upon the bees; but provide them with dry non-conducting porous material, with the ventilating floor and narrow doorway, then your hive is safe. When a hive is heated in transit through long confinement, water sprayed against the outside of the hive lowers the temperature inside the hive. Not unfrequently have we saved bees from suffocation by this simple but effective plan. Now, if a hive stands exposed whenever it becomes damp it has the same effect as when drenched with water, as stated above, and the bees suffer greatly from the lowering of the temperature. To avoid this we cover the whole exterior of the hive with dry and non-conducting material. We avoid double

cased hives because the moisture passes from the bees through the inner shell, and is condensed upon the sides forming the "dead air space," which also extracts the heat from the inside of the hive, and the hive soon decays whether the space has been filled or not. I know full well the advantages derived from "dead air spaces" proper, but a hive having the space filled with cork sawdust is not such a one, neither is it one so long as a hive must always have a doorway for the bees to pass out and in: the principle is destroyed. The foregoing is, perhaps, enough to enable the beginner to understand the evil effects of damp both inside and outside a hive, and how to avoid and prevent it. Never place any non-porous material close upon a hive, any more than you would close a chimney you wished to draw freely.

THE SITE.

Next in importance to the hive and its coverings is the site, which is as essential for the well being of the bees to be dry as the hive and its coverings are. Never set hives where the surface is very damp, because when the bees alight upon it they soon get chilled, and there is always a coldness that renders the bees uncomfortable when inside their hives. A little labour will sometimes convert a very bad site into one of the very best, and there are few places that cannot be improved by judicious draining and planting. A carpet of Arabis is one of the best for bees to alight upon, and it affords both honey and pollen, but it answers a dry soil best. Without dictating too much or too far, leaving the beginner to arrange according to his fancy and means, but we cannot urge too far the importance of windbreaks either in the form of hedges, timber, or iron, avoiding eddies or lakes of water.

THE KIND OF BEE.

I have been so well served and so highly pleased with the Carniolian that had it not been for the introduction of the Punic, apparently the best of all the foreign varieties, I would have had no hesitation in advising no other but the former, and may be it will be as well for beginners to be content with what they have until Punic queens are imported in numbers, which I hear from good authority will be before long.

CROSSES.

As a rule crosses are the best for honey gathering, the Punic being an exception, the pure bees of that race being the most assiduous. It may, however, turn out that with certain varieties, crosses of that race may be the best. It is a pity that dealers have been so imprudent as to introduce into almost every country bees from another. By that injudicious act it is difficult to procure any race pure, and the same may be done with the Punic.

Very shortly after the introduction of the Ligurian bee crosses between it and the common bee found their way to this country as pure Ligurians. Complaints about that were loud and long. After a while Syrian and Cyprian races were introduced, and some of these after a while showed signs of being crossed. To remedy the cry against the more sombre Italians they were crossed with Syrians or Cyprians, and were sold as pure Ligurians, having "sometimes as many as five yellow bands." Out of a dozen Carniolian queens one only represented the true breed, all the others were simply crosses between pure Carniolians and Cyprians or Syrians. The greatest or most prominent distinction between these two races and Ligurians was the yellow saddle upon the thorax of the two former. There are other distinctive features that fully prove them to be distinct varieties, but I never saw a bee having five distinct yellow bands amongst the progeny of hundreds of queens.

I have never witnessed a pure Ligurian bee having the yellow band, and I emphasise this, because in "Gleanings" Mr. Doolittle admits the three varieties as distinct, but adds that "Italians showed this yellow (italics mine) shield fully as plainly as do the Cyprians, so that claim went for nought." From what I have seen and handled of all these races I never yet saw a pure Italian bee having the yellow shield. It was a trick of the dealers to produce

beauty at the expense of their dupes, and it is a pity that such errors should be propagated through ignorance. That it is as desirable to know the character of any race of bees as it is to have nothing but facts recorded will, I am sure, be the opinion of more than—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUE RECEIVED.

W. Drummond & Sons, 53, Dawson Street, Dublin.—*Catalogue of Dutch Flower Roots.*

United States Nurseries, Hextable, Swanley.—*Catalogue of Chrysanthemums.*

James Walters, Exeter.—*Catalogue of Roses.*

H. Cannell & Sons, Swanley.—*Autumn and Winter Catalogue.*

L. Späth, Berlin.—*General Catalogue for 1890-1891.*



* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Blight on Apple Trees (*Beta*).—Your trees are seriously affected with the American blight, but your letter arrived a day too late for being satisfactorily answered this week.

Stock for Plum (*Plum*).—The Mussel is perhaps the best stock for Victoria and all Plums grown as standards. It is free, without producing the grossness of the Brussels, and is not so prone to become stunted as the St. Julien and Damson stocks.

Weed in Lawn (*G. F.*).—The weed that, judging by the example sent, is so firmly established in your lawn, is *Prunella vulgaris*. Its unusual freedom of growth this year is no doubt the consequence of the showery weather during July and August. We suspect you will not find it easy to extirpate the weed.

Fungus on Sycamore (*F. J.*).—The substance you send is the mycelium of a fungus which has penetrated the bark and spread between that and the wood. It is probable that the tree was in an unhealthy condition, and perhaps decaying, before it took possession, but it would materially help to hasten the death of the tree if the attack extended over a large portion of the wood.

Seedling Apple (*G. Fairbairn*).—The Apples sent are far above the average of seedlings that are sent to us. As you say, the variety is an excellent keeper; it might, perhaps, be worth while sending specimens to the Fruit Committee of the Royal Horticultural Society, with a brief history of the tree—its age, habit of growth, and bearing character. If you do this you had better give the variety a name.

Good Gladioli (*W. M.*).—A dozen good varieties are *Amitié*, *Celimene*, *Crépuscule*, *Dalila*, *Enchanteresse*, *Flamboyant* or *Grand Rouge*, *Horace Vernet*, *Le Vesuve* or *Meyerbeer*, *Ondine*, *Pasteur*, *Sultane* or *Opale*. Another dozen may be made up by adding to these *Baroness Burdett Coutts*, *Bicolore*, *De Mirbel*, *Eugène Souchet*, *Fra Diavolo*, *L'Unique Violet*, *Mons. A. Brongniart*, *Pyramide*, *Sceptre de Flore*, and *Tamerlane*. If good corms are bought, they may be cut in two with great advantage. The best trade growers advertise from time to time, also exhibit spikes at the leading shows. It would be obviously unfair for us to recommend particular dealers.

Vine Roots (*Bywater*).—The roots, so far as we can detect, are not suffering from any disease but they have been dead some time. There is no doubt about that, nor of the border needing renovation when it produces such long fibreless roots. The roots have probably been destroyed by vegetable acids, induced by an excess of organic matter or humus, and too little of the mineral elements needed by Vines. The border evidently is too rich, and in a cold, wet condition; the roots consequently strike into the subsoil deeply. The sooner Vines with roots like those you have sent us are lifted the better, bringing the roots well up to the surface, affording sweet soil over good drainage.

Cucumbers Turning Yellow at the End (*Plum*).—The most likely cause is "the syringing every day," which at this season is

liable to cause the water to hang on the fruit and prevent evaporation, causing the fruit to become yellow. Except on very fine days the plants should not be syringed, a light sprinkling being all that is required, and then it should take place in the early afternoon. Where no air is given there is less necessity of syringing, sufficient moisture being generated by damping available surfaces other than the plants in the morning and early afternoon, or when the surfaces are becoming rather dry. The plants are certainly not in a very satisfactory state, but we think that by judicious care in keeping water from the fruit and maintaining a genial condition of the atmosphere that all would go well with the fruit.

Pruning Fruit Trees and Bushes (*St. Julien*).—The extension growths of espalier trees need not be shortened provided the wood is firm and ripe to the ends, and these do not terminate in fruit buds. We say this subject to the wise condition which you indicate of "not letting the higher branches outgrow the lower." This misfortune, however, cannot always be prevented by winter pruning alone, stopping luxuriant leaders in early summer and training weak branches obliquely for a time being more effectual. All winter pruning may be done as soon as the leaves can be shaken from trees and bushes, but in gardens where birds attack Gooseberry buds persistently gardeners find it advantageous to defer pruning the bushes till the spring, in the hope that the predators will have left a few buds out of the many for making growth and bearing fruit. Raspberry canes may be pruned now and the plantations put in order for the winter.

Cutting Down Roses—Yellow-flowered Climber for Greenhouse (*W. W.*).—We should not hesitate to cut down the too tall Roses to any desired extent, as if the plants are healthy, as we suspect they are, they will push growth freely from the cut-back stems. If there are young shoots strong and well ripened which spring from the lower parts of the plants, these might perhaps be bent down and coiled round for flowering. Early spring will be a good time for cutting back and starting the plants, as growths forced in the winter are usually weak. We have seen many Tea Roses cut down nearly to the ground grow luxuriantly afterwards and produce very fine blooms. You might, in addition, if you have room, procure a few smaller plants for affording early flowers. Though not strictly a climbing plant, inasmuch as its growths do not coil round wires, *Cestrum aurantiacum* would probably answer for your greenhouse as a companion plant to *Plumbago capensis*. The *Cestrum* is an excellent wall or pillar plant, and bears yellow flowers freely in the summer and autumn of the same character as *Habrothamnuses*.

Amaryllis Belladonna (*R. I.*).—The name given is that of your plant, and concerning it a correspondent wrote as follows some time ago:—What charming hardy bulbs the *Belladonna* Lilies are. The colour is beautiful, the veins and markings are distinct—a soft peach colour on a white ground—and the delicate fragrance is exceedingly refreshing. The plants carry as many as ten blooms on each spike; the flowers also last a long time in perfection either upon the plant or in a cut state. The great point in its successful cultivation is choosing a suitable position, preparing it, and planting the bulbs, draining the soil carefully that no stagnant moisture lies about the bulbs during the winter months. No position suits them better than at the foot of a hothouse wall facing south. Take out the ordinary soil 1 foot 6 inches deep, place at the bottom 6 inches thick of clinkers or broken bricks, over this some rough turf to keep the drainage intact, filling with a compost of turfy loam, peat, leaf soil, and some charcoal, about two quarts of the former to one of the latter. Cover the bulbs about 2 inches deep with the compost. During the growing season apply water freely, afterwards withhold the supply. The beginning of February is good time to plant.

Eugenias—E. Ugni (*F. J. R.*).—The specimen you send is a fruiting branch of *Eugenia Ugni*, which has been highly extolled as a fruit-bearing shrub adapted to the milder situations of this country. It is a native of Chili, and has been long known under the name of *Myrtus Ugni*. In Chili the natives call it *Ugni*, and the Spaniards *Murtilla*. The juice is expressed from the fruit and mixed with water, furnishing a very refreshing drink, with somewhat of the odour of Rosemary. The fruit is the size of a large Black Currant somewhat flattened, and of a brownish-red colour. The pulp is light-coloured, soft, and juicy, with singular mixture of a sweet and spicy flavour, which is very agreeable. It is cultivated in gardens and used in the dessert by the inhabitants of Valparaiso. Other species of *Eugenia* which yield fruits of some use are the following: The fruit of *E. pseudopsidium*, which grows on the mountains of Martinico, is held in great esteem in the West Indies, where it is called *Gouyavier batard*. A decoction of the leaves of *E. cheken* is said to cure diseases of the eyes. The bark is so astringent as to render a decoction of it of great use in cases of dysentery. The seeds of *E. tabasco* are used as a condiment. *Jamaica Pepper*, or *Allspice*, is the fruit of *E. pimento*, a native of the Carribbee Islands, and now cultivated also in the East Indies. It is a handsome tree about 30 feet high, with a straight trunk much branched above, with dense evergreen foliage. Soon after the trees have blossomed, the berries become fit for gathering, without being suffered to ripen; as, when ripe, they are moist and glutinous, and therefore difficult to cure, and, when dried, become black and tasteless. The berries are dried by spreading them on a terrace exposed to the sun for about seven days, during which time they gradually lose their green colour and become of a reddish-brown. They have a fragrant odour, which is supposed to resemble that of a mixture of Cinnamon, Cloves, and Nutmeg; and hence the name of *Allspice* by which they are known.

Mildew on Vines (H. P.).—The mildew referred to in the article named is the Vine mildew, *Oidium Tuckeri*, concerning which Mr. Barron gives the following account in his "Vines and Vine Culture :"—"This is a fungoid growth upon the young leaves and fruit of the Vine, and was not generally known in this country until the year 1847. Long prior to this, however, in the year 1831 or 1832, the Rev. M. J. Berkeley observed the appearance of this mildew in the vinery of Mr. J. Slater of Margate, which was under the care of Mr. Tucker, and suggested to him the use of flowers of sulphur, with which he readily complied, and succeeded in driving out the pest. An account of this was given by Mr. Tucker in the *Kentish Gazette*, hence it received the name *Oidium Tuckeri*. In America it had, however, been known to exist for many years previously, although, singularly enough, the American varieties of Grapes are not much affected by it. In this country it has caused great destruction amongst Grapes, both in vineries and in the open air, and in Vine-growing countries the entire season's crop is frequently destroyed by its agency. This mildew appears to the naked eye like a little powder only, resting on the leaves, &c.; but by the aid of the magnifying glass it is seen to be a true vegetable parasitical growth. It is a most insidious enemy, and requires extreme watchfulness, so as to observe its very earliest appearance. It vegetates very rapidly; from a small speck it will, in the course of a few days, spread over an entire house, and if not arrested in its growth, its threads will have penetrated so deeply into the tissues of the affected parts as to completely destroy them. The mildew itself may be arrested and killed, but its effects remain, the skin or cuticle of the berry being blackened and injured beyond recovery. It seems to render the berry incapable of distending further, so that it soon splits open and is, of course, ruined. The tissues of the leaves are also injured in much the same way."

Roses Mildewed—Replanting (H. C.).—The mildew would perhaps yield to syringing with bi-sulphate of calcium, or what is known by gardeners as sulphur water. It is made by boiling equal quantities of sulphur and quicklime in water for a quarter of an hour, preferably in an earthen vessel, keeping the mixture stirred all the time. Allow it to settle, then pour off the clear liquid, bottling, and keeping it well corked. A pound each of flowers of sulphur and quicklime are a proper quantity to use to three quarts of water, which in boiling will be reduced to about half a gallon. Of the calcium sulphide add half a gill to a 3-gallon watering-pot of water, syringing the Roses well with the solution. Now that the wood is firm they may be syringed with it at double strength, taking care to wet every part. Next month we should lift the Roses, and laying them in carefully, have the ground trenched, mixing with it, if strong, a sixth part of old mortar rubbish, or, if light, a similar quantity of chalk or clay marl, not using any manure. Failing either of those substances, give a dressing of quicklime at the rate of a bushel per rod (30½ square yards), but it must not be buried deeper than the top spit, in fact it must be mixed with that, or may be applied after the ground is trenched and forked in. Lifting will not prevent mildew, but it will enable the Roses to better resist the disease by tending to a firmer growth, and by hardening the outer covering of the bark and leaves the plants will be healthier. After syringing the Roses with the sulphide, you may dress the ground evenly, and whilst wet, with sulphate of iron at the rate of half a pound per rod, mixed with its own weight of dry sand to insure its even distribution. This will destroy fungoid germs, and its effect on the Roses will be the increasing of their substance, and their colour will be improved. The chief cause of mildew is a deficiency of lime, and, in some respects, iron, which fixes ammonia; and the roots in attacking the ammoniated iron abstract some iron, and the whole plant is strengthened. It would be best to treat the Tea Roses as you propose.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. **Apple from India (R. C. Lee).**—We are sorry the very fine Apple arrived perfectly soft; in fact, exactly as if it had been baked in an oven, and therefore we are quite unable to form an opinion of its qualities. It did not reach us till nearly a fortnight after your card of advice. It resembles a very large specimen of Warner's King, which is not a long keeping variety. (*G. Mant*).—1, Cockpit; 2, London Pippin; 3, Cellini; 4 and 5, not known, worthless; 6, New Bess Pool. (*W. X.*).—Sorry we cannot identify either of the specimens with absolute certainty. (*F. H. K.*).—Worcester Pearmain. (*Robert Archer*).—Greenup's Pippin. (*Vesta*).—1, Sturmer Pippin; 2, Dume-low's Seedling; 3, Hawthornden; 4, Cockle's Pippin; 5, Selwood's Reinette; 6, Golden Winter Pearmain. (*T. S.*).—1, Beurré Superfin probably; 2, Marie Louise d'Uccle; 3, Cockle's Pippin; 4, Fearn's Pippin; 5, Reinette de Canada; 6, Manx Codlin. (*R. W. Ronayne*).—1, Brown Beurré; 2, Adèle de St. Denis; 3, Quite rotten; 4, Beurré Capiaumont. (*G. Foster*).—1, Bergamotte Esperen; 2, Beurré Diel. (*J. M.*).—1, Beauty of Kent; 2, Not known; 3, Local; 4, Kerry Pippin; 5, Local; 6, Beurré Clairgeau. (*F. Ashman*).—1, Bonne d'Ezée; 2, Beurré d'Anjou; 3, Not ripe; 4, Dr. Nelis; 5, Louise Bonne of Jersey; 6, Not ripe. (*G. C. C.*).—1, Not known; 2, Flanders Pippin; 3, Small's Admirable; 4, Lemon Pippin; 5, Northern Greening; the Pear is Bishop's Thumb.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers.

Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*W. W.*).—Neither of the Ferns you send is *Adiantum Sanctæ-Catherinæ*, which has much larger pinnæ. No. 1 is *Adiantum pubescens*, and No. 2 *A. pedatum*. (*J. Harding*).—We have no specimens of flowers of any kind awaiting attention, but all we have received have been named. (*R. T.*).—*Amaryllis Belladonna*. See reply above. (*J. A.*).—It resembles a species of *Mucuna*, but we cannot determine it from so imperfect an example. (*B.*).—The specimens reached us in very bad condition; 1, is *Hypericum calycinum*; 2, is *Spiræa filipendula flore pleno*; 3, is *Monarda didyma*; 4, unrecognisable; 5, is *Salisburia adiantifolia*. (*J. F.*).—The *Chrysanthemum* is too much like several other early flowering Japanese to be of value. (*E. H. T.*).—It is apparently a strong seedling form of *Chrysanthemum segetum*.

COVENT GARDEN MARKET.—OCTOBER 22ND.

A STEADY business doing, with little or no alteration in prices.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, ½ sieve	2	6	to	6	0	Lemons, case	35	0	to 45 0
" Nova Scotia and						Melons, each	1	0	2 0
Canada, per barrel	0	0				Oranges, per 100 ..	4	0	9 0
" Tasmanian, p. case	0	0				Peaches, dozen ..	3	0	12 0
Grapes, per lb.	0	9				Plums, ½ sieve ..	4	0	9 0
Kentish Filberts, 100 lbs.	0	0				St. Michael Pines, each..	2	0	8 0
" Cobs	70	0				Strawberries, per lb.	0	0	0 0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes, dozen ..	0	0	to	0	0	Mnshrooms, punnet ..	1	6	to 2 0
Asparagus, bundle ..	0	0				Mnstart & Cress, punnet	0	2	0 0
Beans, Kidney, per lb.	0	3				Onions, bnshel. ..	3	0	4 0
Beet, Red, dozen ..	1	0				Parsley, dozen bunches	2	0	3 0
Brussels Sprouts, ½ sieve	1	9				Parsnips, dozen ..	1	0	0 0
Cabbage, dozen ..	1	6				Potatoes, per cwt. ..	3	0	4 0
Carrots, bunch ..	0	4				" New, per lb. ..	0	0	0 0
Cauliflowers, dozen ..	2	0				Rhnbarb, bundle ..	0	2	0 0
Celery, bundle ..	1	0				Salsafy, bundle ..	1	0	1 6
Coleworts, doz. bunches	2	0				Scorzoneria, bundle ..	1	6	0 0
Cucumbers, doz. ..	2	0				Seakale, per bkt. ..	0	0	0 0
Endive, dozen ..	1	0				Shallots, per lb. ..	0	3	0 0
Herbs, bunch ..	0	2				Spinach, bushel ..	1	0	2 0
Leeks, bunch ..	0	2				Tomatoes, per lb. ..	0	6	0 8
Lettuce, dozen ..	0	9				Turnips, bunch ..	0	0	0 4

CUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	4	0	to	6	0	Marguerites, 12 bunches	2	0	to 6 0
Asters, per bunch, French	1	0				Maidenhair Fern, dozen			
" English, 12 bnchs.	4	0				bunches	4	0	9 0
Bouvardias, bunch ..	0	6				Mignonette, 12 bunches..	1	0	3 0
Carnations, 12 bunches ..	6	0				Pansies, dozen bunches ..	0	0	0 0
" 12 blooms ..	1	0				Pelargoniums, 12 trusses	0	9	1 0
Chrysanthemum, 12 blms.	1	0				" scarlet, 12 bnchs	4	0	6 0
" 12 bunches	4	0				Pinks (various), doz. bchs.	6	0	9 0
Cornflower, doz. bunches	0	0				Primula (double) 12 sprays	0	6	1 0
Dahlias, dozen bunches ..	2	0				Roses (indoor), dozen ..	0	6	1 6
Eucharis, dozen ..	3	0				" Red (Eng.), 12 bch.	4	0	8 0
Forget-me-not, doz. bnch.	1	6				" Red, 12 blooms ..	1	0	2 0
Gardenias, 12 blooms ..	2	0				" Tea, white, dozen ..	0	8	2 0
Gladiolus, 12 bunches ..	8	0				" Yellow	2	0	4 0
Gypsophila, per bunch ..	0	0				Stocks, dozen bunches ..	0	0	0 0
Lapageria, 12 blooms ..	2	0				Sweet Peas, 12 bunches	0	0	0 0
Lavender, dozen bunches	0	0				Tuberose, 12 blooms ..	0	4	0 9
Lilac (French) per bunch	5	0				Violets (Parme) ..	2	6	3 6
Lilium, various, 12 blms.	1	0				" (dark)	1	0	2 0
" longiflorum, 12 blms.	4	0				" (English), doz. bnch	1	0	2 0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Aralia Sieboldi, dozen ..	6	0	to	12	0	Geraniums Scarlet, p. doz.	2	0	to 6 0
Arbor Vitæ (golden) doz.	6	0				Heliotrope, per doz. ..	4	0	6 0
Asters, dozen pots ..	6	0				Hydrangea, doz. pots ..	9	0	18 0
Calceolaria, per doz. ..	0	0				Lilium lancifolium, doz.	9	0	18 0
Chrysanthemum, per doz.	6	0				" longiflorum, doz.	0	0	0 0
Climbing Plants, various,						Lily of the Valley, 12 pots	0	0	0 0
dozen pots	4	0				Lobelia, per doz. ..	0	0	0 0
Dracæna terminalis, doz.	24	0				Margnerito Daisy, dozen	6	0	12 0
" viridis, dozen ..	12	0				Mignonette, per dozen ..	4	0	6 0
Erica, Cavendishi, per pt.	0	0				Musk, per dozen ..	0	0	0 0
" various, dozen ..	12	0				Myrtles, dozen ..	6	0	12 0
Enonymus, var., dozen ..	6	0				Nasturtiums, dozen pots	0	0	0 0
Evergreens, in var., dozen	6	0				Palms, in var., each ..	2	6	21 0
Ferns, in variety, dozen ..	4	0				Pelargoniums, per doz. ..	6	0	12 0
Ficus elastica, each ..	1	6				Rhodanthe, per dozen ..	0	0	0 0
Foliage plants, var., each	2	0				Stocks, per doz. ..	0	0	0 0
Fuchsia, per doz. ..	4	0				Tropæolums, various, per			
Geraniums, Ivy, per doz.	0	0				dozen	0	0	0 0



AT A BERKSHIRE HOME FARM.

It was only about a year ago that we were complaining of a general want of skill in building corn ricks among the workmen of East Anglia, and we had reason enough to complain, for we had

not one man able to build a first-class circular rick at either of the six farms we had then in hand. Since then frequent journeys through the midland and southern counties has enabled us to see many a goodly rick, and quite recently we have seen a considerable number at different farms in Berkshire, and at the home farm to which our title has reference we saw at the homestead some magnificent ricks alike remarkable for large size and symmetrical proportions. Every stack was built upon a timber stand raised upon stone piers some 2 feet or more from the ground, well out of reach of rats and damp, with the sides swelling outwards with a gentle curve upwards to the eaves of the thatch, which with the sides was clipped closely, not an ear of corn being wasted, and the stacks were literally damp proof and vermin proof. They were simply perfection, and if only such corn stacks were the rule and not the exception we should soon cease to hear complaints of the ravages of rats, aye and of mice too, for these "unconsidered trifles" do much mischief in the aggregate. It was at another home farm in Northamptonshire last year that we were standing near an old Wheat stack of such an exceptionally large size that we were curious to know all about what area of land the noble stack represented, and the quantity of corn it was supposed to contain. While these particulars were being discussed we called the bailiff's attention to a powerful odour of mice which came from the stack. The mice were certainly there in large numbers, and very muck corn must have been consumed and spoiled. It could not be helped, for the stack was built on the ground, but the wisdom of keeping over such stacks is as questionable as is the system of building them.

The homestead of the Berks farm had other especial attractions. The bailiff's house, a substantial building of brickwork and tiles, was well placed in a central position, whence speedy access could be had to the entire homestead, and the farm buildings were all sound, plain, business-like structures, every one of them being admirably adapted for its especial purpose. The entire floor of the barn was of asphalt, with brickwork carried up from the floor sufficiently high to exclude vermin, which were also kept out by well-fitting barn doors and good door sills, often the weak point of a barn. In making asphalt floors the ordinary practice of making the part which answers to the old threshing floor between the central doors 3 inches thick, and the remainder only half that thickness, answers very well if no heavy vehicles or horses ever go upon the thin part; if they do it soon becomes broken up, so that it generally answers best to have the entire floor of an uniform thickness of not less than 3 inches. One of the best floors we have had made was of Portland cement concrete 4 inches thick. If well done there is nothing more durable, and much experience of such work has led to the conclusion that it is superior to asphalt, wood, or hard bricks. The granaries were separate buildings with raised floors on piers, quite out of reach of harm from damp or vermin. Especial attention had evidently been given in this matter in all the buildings, and we may remark in passing that a damp-proof floor is not a difficult matter to contrive for a granary on the ground floor, and if the granary is made over stables or other buildings the floorboards should always be matched and tongued to prevent any subsequent trouble from shrinkage. It is really singular how frequently this simple but important matter is overlooked. Many a faulty old granary floor have we had to replace; weak joists and thin un-tongued boards both pointing to contracts, cheap or scamped work, false economy, and ignorant or careless supervision.

The swine were not confined in stys, but had the large commodious sheds which we have found to answer so well. None of the farm workmen are allowed to keep a pig at their cottages, but they have what pork they require at a very low price from the farm, and the various other privileges of which we were told showed that they had a kind and considerate master. The pigs were compact, well-bred animals, the only fault being in the sows, which were somewhat over-large and heavy. This is a general

fault worthy of attention, for an unwieldy sow so often smothers or crushes its pigs under its huge carcass that it is best fattened and sold.

The cattle were all out on some capital pasture, some twenty store beasts being brought on for stall feeding by having a certain quantity of dry food regularly out on the pasture. This was given them in tubs made by sawing paraffin casks in halves, a cheap and efficient substitute for the ordinary iron pans. For water they had the Thames flowing through the pasture, a limpid stream innocent of any of the foulness of its waters near London. No attempt had been made to finish the beasts on the pasture. The most forward in condition would go out for the butcher by Christmas, and the remainder in the following two months. They were evidently managed under a well tried and excellent system, and we parted from our friend, the able manager of the farm, with a feeling of pleasure, a sense of something gained, which the inspection of such a farm always affords.

WORK ON THE HOME FARM.

Corn sowing on heavy land has been hindered by drought, but enough rain has now fallen to set plough and drill going again, and the remarkable continuance of fine weather is much in favour of good and brisk work of all kinds on the land. We certainly enter upon another farming year with the land generally cleaner than it has been for several years, and all work well forward. A glut of Wheat in the market has caused prices to continue falling, but Michaelmas brings with it such urgent demands for money that it must be had even at a sacrifice.

Cows and store cattle are now taken into the yards at night, and complaints of a falling off in condition of forward beasts, through undue exposure on cold nights, show either a want of convenience or of care in affording the necessary shelter. Both cows and beasts will go out to graze on all fine days till about the end of the month, when they will have become settled in winter quarters. Cabbages are exceedingly good this autumn, and they will come into full use towards the end of the month as grass feed falls off. Such a supply of green food is then invaluable to prevent both cows and store beasts from a falling off in feeding, as they are confined more and more to yard and fattening shed. We have already seen some sheep folded upon Cabbages, which may be a sign of plenty, and of the predominance of sheep over cattle. Leading East Anglian farmers still declare sheep to be the farmer's best friend. They are wise, for many a man has cause for bitter regret just now over losses upon high-priced store cattle.

Potatoes are being lifted and stored in excellent condition, the percentage of diseased tubers being small, and the bulk of the crop is a bright fine sample. Magnum Bonums have certainly developed haulm, at the expense of tubers, which are, however, remarkably free from disease. Seed is being carefully selected for another season, and it will be placed thinly in a dry shed where it is safe from frost. No seed Potatoes should ever be placed in heaps and left there to sprout. Such abortive growth exhausts the seed and seriously affects the next crop, which suffers a proportionate loss in vigour and productiveness. It is a good plan to give a trial to some new sorts every year, for it is certain that the best way of keeping down loss from disease is to plant only sorts that are comparatively new and in full vigour.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

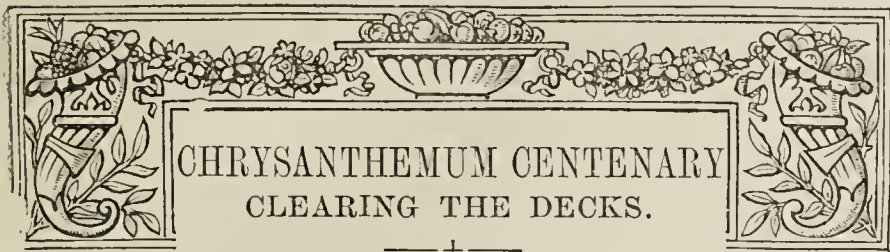
Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain
1890. October.		Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature.		
			Dry.	Wet.			Max.	Min.	In sun.	On grass	
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.	
Sunday	12	30.434	43.8	47.1	E.	51.6	64.3	41.8	89.3	37.2	—
Monday	13	30.401	41.9	41.9	Calm.	50.4	62.7	35.2	91.8	28.8	—
Tuesday	14	30.199	43.1	42.9	S.W.	48.9	54.9	34.6	66.1	29.8	—
Wednesday ..	15	29.769	52.2	50.4	S.W.	48.0	56.0	41.0	87.6	35.9	0.197
Thursday	16	29.648	47.8	44.0	W.	48.2	55.6	40.4	97.1	35.6	0.017
Friday	17	29.858	48.7	44.4	W.	47.9	54.1	43.0	67.5	37.9	—
Saturday	18	29.990	50.9	46.1	W.	47.9	54.4	43.4	78.7	38.1	—
		30.043	47.6	45.3		49.0	57.4	39.9	82.6	34.8	0.214

REMARKS.

- 12h.—Bright and fine throughout.
 13th.—Rather dense fog all morning, began to clear about noon, and bright from 1 P.M.; foggy again in evening.
 14th.—Fog all morning; sunshine from 2 to 4 P.M., then foggy again.
 15th.—Bright early; mild and showery from 9 A.M. to 1 P.M.; bright sun from 2 P. . to sunset; heavy shower at 8.45 P.M.
 16th.—Almost cloudless early; bright morning; high wind, frequent cloud and occasional spots of rain in afternoon; showers at night.
 17th.—Generally overcast in morning; fair afternoon with some sunshine.
 18th.—Generally overcast throughout.

On the whole a bright autumn week, though two days were foggy. Temperature at last just below the average, having been above it for six consecutive weeks.—G. J. SYMONS.



LAST year was evidently regarded by some authorities as the hundredth anniversary of the introduction of the present race of Chrysanthemums into this country. The plant first flowered on the Continent in 1789, and the Belgians were right in celebrating the Centenary last year; but it was not until the season following that the flower was seen in England, and therefore we believe the National Chrysanthemum Society to be quite correct in their fixture of the forthcoming celebration. The present year marks a distinct epoch in the history of this flower, and it is fitting that it should be the subject of special attention. A bright, cheery, joyous time the present Chrysanthemum season should be. In connection with the National Society, however, the joy must be tempered with the deepest sorrow by the lamented death of its laborious Secretary, the late Mr. William Holmes. It is sad that a promising life should be cut short at any time, but in this case doubly so, for all felt he was on the eve of the triumph that would have rewarded him for his unremitting work. He will not be forgotten, for his memory will be cherished, and his name kept in long and loving remembrance by hosts of friends.

Though this is the Chrysanthemum Centenary year, there is no precise date more appropriate than another for doing honour to the event. This must of necessity be governed by circumstances and controlled by convenience. The show days of different societies will naturally be the celebration days, and these, for obvious reasons, must differ. Foreseeing an unusually great campaign ahead of more than a hundred floral contests, and the consequent claims on our space, we have considered it the best, both for ourselves and our army of Chrysanthemum constituents, to be in advance of all the shows in recognising the services of officers and men who have done, and are doing, such excellent work in the Chrysanthemum world. This could not be done adequately after the shows begin and their demands for publicity, therefore we clear the decks for action.

It is not our intention to indulge in anything approaching sensationalism, but hope in a manner not inappropriate to produce a substantial memorial of an eventful year. The ancient history of the Chrysanthemum has been written and published repeatedly in these pages. In those matters, therefore, we shall not lengthily indulge on the present occasion, and while appreciating the researches that have been made in the direction indicated our pleasure now is mainly to deal with the work of the present generation and to portray a few of the workers of to-day—some as organisers of societies or secretaries of shows, others as exhibitors who have won high honours—all as representative men who assiduously endeavour to extend the cultivation of Chrysanthemums in the various districts of the kingdom.

To summarise an historical reference very briefly it may be said that the earliest recorded Chrysanthemum in this country of the types now so popular was a small flowered variety of *C. indicum*, which was cultivated by Philip Miller in the Chelsea Botanic Garden in 1764, but was subsequently lost, and can only be traced by a specimen preserved in one of the large herbaria. The large flowered varieties first made their appearance in England in 1790, and numbers of others were introduced in succeeding years, from which sprang still later the majority of incurved, reflexed, and Anemones, now such favourites. Then we come to an important

epoch, the introduction from China in 1846 of the Chusan Daisy and Chinese minimum by Mr. Robert Fortune, which in the course of some years resulted in the production of the neat and elegant Pompons. These, like many others of the family, we mainly owe to the French florists, for the "Chusan Daisy" was despised or ignored in this country until our continental neighbours had proved its capacity for variation and range of beauty.

To Mr. Robert Fortune, however, Chrysanthemum growers are still more deeply indebted, for to him are due the first Japanese varieties seen in this country, and there can be no question that the numberless richly coloured and strangely formed varieties since produced have done more to popularise the plant than all previous efforts. It was not until 1862 that Mr. Fortune's Japanese curiosities reached England, and then their fantastic appearance, so different from that of the varieties prized by the florists, excited much unfavourable criticism, and few could have thought that the "Dragons" and the neat little Laciniatum, still occasionally seen,



FIG. 42.—MR. ROBERT FORTUNE AT THE AGE OF 54.

would be the forerunners of so many fine seedlings and introductions. But again, we are largely indebted to our friends over the Channel for a large proportion of the varieties in cultivation at the present time. We have much pleasure in giving the prominence which is due to the portrait of Mr. Fortune as a Chrysanthemum pioneer. He died in 1880.

As a raiser of Chrysanthemums, one British name, however, stands out prominently, and must be mentioned here—namely, that of Mr. John Salter, who for nearly thirty years gave close attention to the improvement of the plant and succeeded in raising a large number of valuable varieties, many of which still hold an unrivalled position in the lists of incurved. In 1838 Mr. Salter took a nursery at Versailles, and from there, and subsequently at the "Versailles Nursery" at Hammersmith, his novelties were distributed nearly every year, the majority of which were noted at the time in the issues of this Journal frequently by the enthusiastic florist, Mr. Donald Beaton.

To the great army of cultivators who have performed such good service in the twenty years all plant lovers are very much indebted, for they have proved what great results can be

attained by continued perseverance and healthy rivalry. The societies, with their shows and prizes, have contributed largely to this advance, more perhaps than can be adequately gauged, and for this reason we have accorded some representative places in our gallery of portraits to-day.

In order to make our issue as complete as possible within the limits, we have thought it appropriate to illustrate a Chrysanthemum show. For this purpose we have necessarily had to choose one of the past, and therefore reproduce on page 385 an engraving of the Kingston Show, which first appeared in the *Journal of Horticulture* in 1886.

CHRYSANTHEMUMS—EXHIBITORS' MISTAKES.

MUCH valuable information has been disseminated in the pages of the *Journal* for the benefit of Chrysanthemum growers and exhibitors, and for which many are thankful. I for one owe much to the many hints gained through that medium during my career in the exhibition field, which did not extend over a long period, but was most enjoyable, although it entailed much hard work. We are often told what exhibitors should do, but I do not remember having seen an article on "exhibitors' mistakes," which, as a rule, we do not care to chronicle. It is a weakness of human nature to hide defects, but from a chapter of mistakes it is very easy to gather valuable information. I purpose detailing a few striking incidents of my exhibiting career, that others may avoid committing the same errors.

One of the greatest mistakes which some exhibitors commit is that of boasting what they are going to do at a coming show. I once heard a well-known exhibitor give some excellent advice—which I will repeat in his own language—to a remarkably self-opinionated person, who was expressing his intentions loudly. The experienced exhibitor, who is remarkable for his quiet manner of speech, listened patiently, then placed his hand upon the shoulder of the vociferator, exclaiming, "My friend, never thou open thy mouth till thou seest card ont teeabel." I shall never forget that episode, which silenced the boaster effectually.

Some exhibitors have a disdainful way of speaking of a defeated opponent. This is a mistake, because no one can tell what may happen on the morrow. In company with several others on a long railway journey to an exhibition, in the course of conversation one of the party happened to say how many years he had been a grower of Chrysanthemums. The person alluded to, and who had defeated the other many times in competition, snappishly remarked, "Yes; you have grown at 'em," inferring that the cultural details were only partly understood. The same two persons have many times since stood in reverse positions on the exhibition tables. The despised one has lived long enough to attain a high position in the exhibition hall. Over-estimation is a mistake which experience will remedy.

Grumbling at the verdict is another mistake, for which some exhibitors have earned a reputation. So much is this the case that those who are acquainted with them always expect to hear complaints if they are compelled to occupy any other than the first position in the prize list, and in nineteen cases out of every twenty the grumbler has no cause for complaint. I have known men follow the judges about the show for the whole afternoon, pointing out the excellence of their exhibits, ignoring of course their deficiencies. Much better is it to take defeat gracefully. Another mistake some make when occupying a second or a third position is that of exclaiming, "Why I could have brought better blooms had I known, I have plenty at home." This invariably is what would be termed a "lame tale." Seldom, indeed, do exhibitors depend upon their second best quality when the results at stake are important.

Excitement is a weakness which the oldest of exhibitors cannot at all times control. It is, however, a mistake to give way to it, as it very often prevents the proper carrying out of duties necessary at a crucial point when a cool head and steady hands are of such advantage. I would remind beginners that the coolest persons generally do the best work, either on the exhibition table or at home, for the matter of that. Some persons allow themselves to be carried away by excitement, so much as to be perfectly helpless. I was once in company with a noted exhibitor who was arranging his blooms on the exhibition table in competition for a valuable prize. The moment his opponent placed his stand of blooms alongside, the exhibitor named was so excited at the prospect of winning, that in the absence of mind he suddenly took off his coat, threw it on the floor of the hall, walked to and fro in front of the stands, and as suddenly replaced his coat without attempting to do anything more. Afterwards he was so helpless that he was unable to

write a name or verify those on the stand, or to make sure the blooms were distinct, which is generally the last thing to do, to make sure a duplicate has not "crept in." In another case of excitement, an exhibitor was so elated over the prospect of winning a noted prize in the north of England, that on the strength of the information of one of the stagers who came out of the room where the adjudicating was taking place, informing the exhibitor that he was almost sure to win, telegraphed at once to his wife the happy event, yet when the verdict was authoritatively given this exhibitor occupied only the third position. Imagine his chagrin.

Mistakes are often made by exhibitors in preparing for and going to shows, also in not thoroughly examining the regulations and classes in the schedule, thereby bringing disqualification as the result of neglect. I have heard of persons making a mistake in the date of a show. One exhibitor blundered so far over this that he went with his blooms a week too soon. Another arrived a day too late. The most general mistake made is that of not allowing sufficient time to do the work necessary in a proper manner, rushing through it simply because an extra hour in bed should be obtained. Men have been known to have lost valuable prizes, which was distinctly traceable to want of time in preparing and packing the blooms. Much of this has to be done by lamplight, it is then that mistakes occur. The colours under this light are so deceptive that yellow blooms can easily be mistaken for white, and duplicate blooms are inserted. More often is a mistake made in this direction when duplicate blooms in say six varieties are allowed, but not more than two of a sort; three sometimes creep in instead—as for instance in the case of a noted exhibitor at the Aquarium, who lost the first prize a few years since in a leading class through making this very mistake.

The mistake most generally committed is that of deferring cutting the blooms till after dark. All blooms should be cut and carefully placed together in their respective classes during the day-time, when it is hardly possible to make a mistake in this direction. I once saw a valuable silver cup lost in the way stated. The winner was only two points in advance of the second prize man, and as the one to whom I allude was complaining of the justice of the award I remarked, "If you had taken the 'eye' out of that Queen and the same with that Peter, you would have won," which doubtless the Judges had taken into consideration. His reply was, "But I had not time." This was a mistake which proved of serious consequence. Many mistakes might be quoted which are traceable to "rushing," owing to want of time in not commencing earlier to make preparations, such as going away without taking the tweezers, forgetting a bloom that was put in the cellar to keep fresh. As, for instance, a new beginner last season left his "Gluck" behind in the same manner; when a hundred miles from home he remembered where this bloom was left. Forgetting the packet of labels may be a serious matter, as so much needless time is taken up at the show in procuring more labels and writing the names, when this time could be better devoted to arranging the blooms in the stands, and other duties.

It is also a mistake to depend entirely upon just the number of blooms required, not taking an extra one or two in case of accident. A celebrated northern grower was said to have lost a valuable first prize through having one of his blooms damaged in transit and not having another at hand to replace it. Always take two or three extra blooms. These should not be duplicates of those in the competing stand, because it is not known which bloom would be damaged, if any; but by making sure of an extra number of sorts the loss of one bloom is easily repaired. Many instances of wrong naming could be quoted which could be traced to neglect in ascertaining the correct names; for instance, when "Annie Fuss" is written for "Amy Furze," and "George Patney" for "Putney George," there can be no excuse.

I have seen many mistakes made in the transit of cut blooms, such as giving the boxes in the charge of railway guards and porters, who unknowingly turn them upside down, sometimes to be more convenient for conveyance from one train to another; having them jolted one against the other in the guard's van, instead of carefully handling the boxes yourself, and stowing them into the van also in such a manner that jolting is impossible.

Some exhibitors are very fond of staging their blooms very early at the show, in fact hours before it is necessary, the consequence is if the room being warm and so situated that the sun can shine upon the blooms, they fade, are covered with dust, and are on view to the eye of your opponent, that he has ample opportunity to detect the weak points and strengthen his own. Some exhibitors are too fond of showing off their exhibits to a certain class of admirers, that it is decidedly against their own interest for the reasons stated. One great mistake in staging the blooms is that of placing them too low upon the stands. The judges cannot examine them nearly so well, and, besides, the low position dwarfs the blooms considerably. If a beginner will take notice of this he will find it is not the successful exhibitors who make this

mistake. There are some who do not like to be told that this is a fault, and that makes the mistake a double one.

Some exhibitors make a mistake in staging varieties together which are too much alike, although they may be known to the owner as distinct, but if there is any doubt about their character not being quite clear it is unwise to run the risk of being disqualified for the reason stated. Far better is it to depend upon those sorts about which there can be no doubt whatever as to their distinctness.

One further reference only will I make—namely, on the subject of dressing the blooms. This necessary item in exhibiting is much decried by those who do not practise it as being everything that is bad towards spoiling the blooms. At a noted northern show I was inspecting the cut blooms, and found a stand of twelve incurved specimens of large size, but many of them having a fully developed “eye,” especially in the “Queen family.” I remarked, “They would be good blooms if they were dressed.” A bystander, a stranger, rejoined, “If they had not been dressed they would have been good blooms.” Now, it was apparent that the flowers were staged almost as cut from the plants, and it was a mistake to say that dressing would spoil them.

In conclusion, I would say that by a close study of what not to do, that which an exhibitor should strive to accomplish can easily be learnt, it being mainly a question of the proper use of what we all possess—viz., “brains, gentlemen, brains.”—EDWIN MOLYNEUX.

CHRYSANTHEMUM FLOWERS AND SEEDS.

RAISING Chrysanthemums from seed has become an important matter, and although the majority are obtained from imported seed saved in the south of France, Algiers, and other warm regions, yet it has been repeatedly proved that seed can be ripened in this climate. At the present time Messrs. Laing & Sons at Forest Hill have some seedling Chrysanthemums raised from seed saved last season, and as the seed parent was the distinct Japanese variety, Edwin Molyneux, the flowering will be watched with much interest. Several other nurserymen also have seedlings said to be from home-raised seed, and the matter is worth the attention of amateurs who are partial to making experiments. To assist in explaining the character of the flower, which is by no means generally understood, the appended illustration is reproduced by the courtesy of the Secretary, the Rev. W. Wilks, from the Journal of the Royal Horticultural Society (March, 1890). The accompanying remarks form a portion of a paper read by Mr. F. W. Burbidge at the Conference held at Chiswick on November 6th last year, which also gave an exhaustive description of the experiments undertaken by various raisers. The chief condition requisite to success appears to be that the seed should be set as early as possible, and that it be allowed a long period of ripening, at least two months, and no doubt saving immature seed has been the cause of many failures.

“The Chinese are a peculiar people, and in many ways different to the gardeners of the West. They are more insulated and self-contained. Less than a century ago China was the whole world to the Chinese. Although they live much nearer to the tropics than we do, they have not felt that soul-hunger for the plants of other and warmer lands than their own, which is such a characteristic feature in our horticulture of to-day. The mandarins, or nobles of China, allow the aristocratic Orchid to sway and flutter neglected on its native bough; but the one thing they do admire and value is their native Chrysanthemum, a flower which, with their neighbours the Japanese, they cultivate to perfection. It is the national flower of a great and powerful people, and not only of the conservative Chinese themselves, but of the more liberal Japanese, and also of the people of Siam. But what at the beginning of this paper I am anxious to emphasise is the broad central fact that the Chinese gardeners have gone out to their own waysides and hedges, and have brought into cultivation their own wild flowers. The Tree-Pæony, the Camellia, the Azalea, the Rose, and, above all, the Chrysanthemum, are a few only of their favourites, which may serve to illustrate what I

mean. Mr. Fortune told us, after his second return from China, that the Celestial gardeners did not care for any of the plants he took out with him from England, except for the scarlet Zonal Pelargonium; and certainly the faith and persistence with which these people have improved their own wildings is very remarkable, and I have sometimes thought that therein lies, by implication, the moral lesson to our British gardeners, “Go thou and do likewise.” I am afraid, however, we are too fond of jumping to conclusions, too fond of rapid results, to take up the culture of our native Corn Marigold (*Chrysanthemum segetum*), or our great Ox-eye Daisy (*Chrysanthemum leucanthemum*), with anything like the long-suffering faith that must have prompted and animated the Chinese gardeners who first began the culture of the wild *Chrysanthemum* centuries upon centuries ago. It is not only possible, but extremely probable, that the *Chrysanthemum* was a popular garden flower in China when Egypt was in its prime, and in the future it is likely to remain the national floral emblem of a people who will either, as friends, help us to

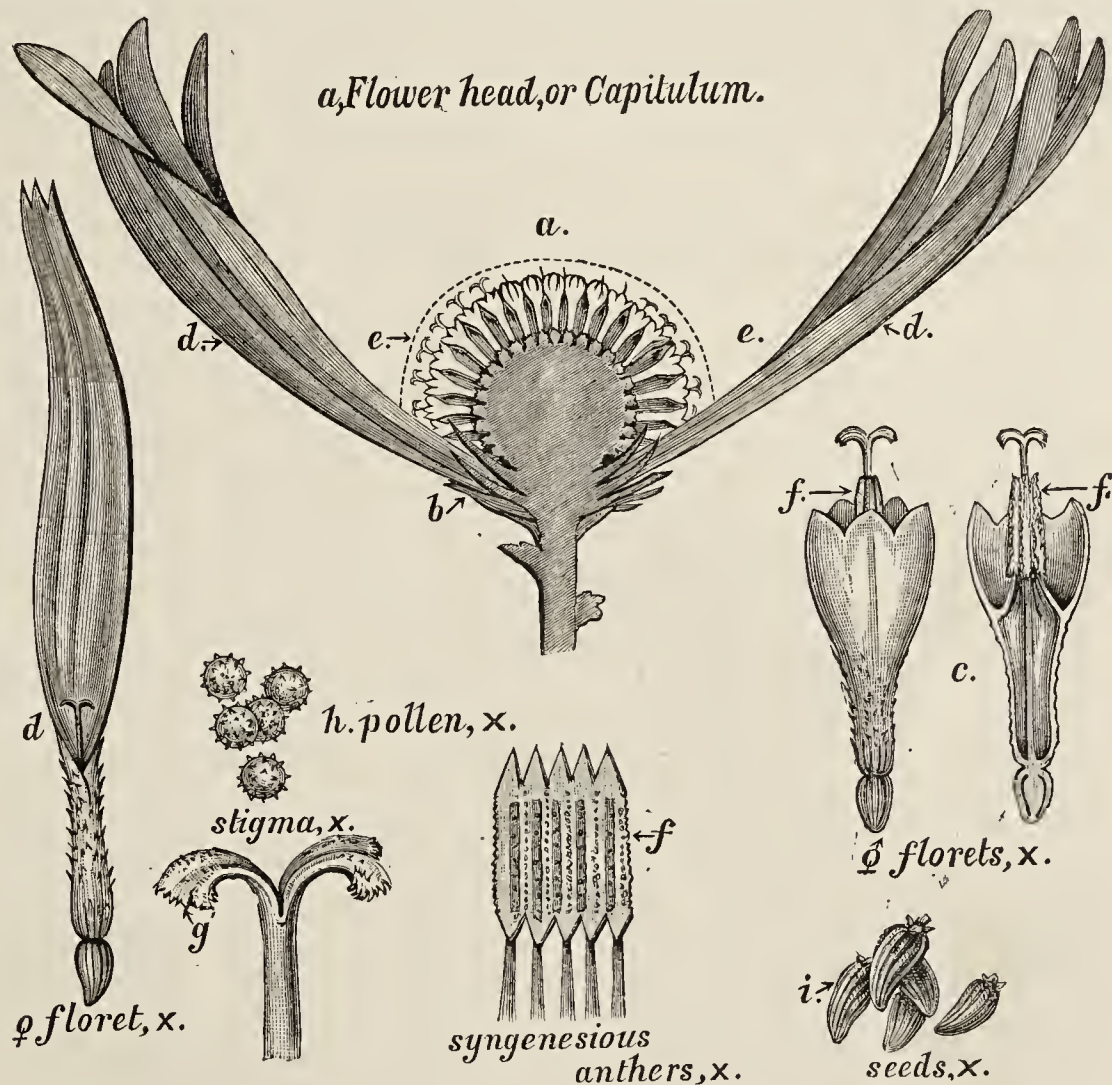


FIG. 43.—THE CHRYSANTHEMUM.

a. Diagram showing arrangement and analysis of flower head, or capitulum.
b. Involucral bracts.
c. Hermaphrodite florets.
d, d. Female florets, or ray.
e, e. Disc of the capitulum.
f. f. Syngenesious anthers.
g. Bifurcate stigma.
h. Pollen grains.
i. Seeds.

keep our foothold in the East, or, as foes, they may possibly eat up the Russian Bear, and then reserve the eastern half of the world's loaf for themselves.

“We have now to consider the flower itself. I have reasons for believing that the small single yellow *Chrysanthemum indicum* (commonly cultivated in India, although only wild in Corea, China, and Japan) is the original wild type from which natural variation, and culture have evolved all larger growing and more highly coloured forms. All the botanists, from Linnæus and De Candolle to Messrs. Forbes and Hemsley (*Jour. Linn. Soc.*, vol. xxiii., p. 437-8), have considered *C. indicum* and *C. morifolium* (=sinense) as two distinct species. I only believe in one species—the so-called *C. indicum* (of which *C. morifolium* (*C. sinense*) is, as I take it, a mere geographical variety), since I find that nearly every batch of seedlings exhibits a tendency to revert to this, as the primitive yellow-flowered type, although all sorts and sizes and conditions and colours, are obtainable from seeds gathered from the same capitule, be the seed-bearer Pompon (*C. indicum*) or large-flowered (*C. morifolium sinense*). When the weird forms, now known to have been of Japanese garden origin, were introduced by Mr. Fortune in 1862, we were very nearly led to believe in a third species (*C. japonicum*), so distinct and different were these flowers

to those previously known in Britain. Even supposing that there originally were two wild species of Chrysanthemum in China or Corea (a view from which I dissent), the result, as above stated, would tend to show that they must have intercrossed freely with each other; but all my observations go to prove that the weedy little single yellow Pompons, which so often come from the seeds saved from the finest and most modern of the large-flowered kinds, really imply reversion to first principles (ativism), and not the unmixing of two distinct wild plants naturally or artificially cross-fertilised.

"Botanically the Chrysanthemum is a glorified Ox-eye Daisy, trying hard to raise itself from a herbaceous perennial into an ever-green shrub. It belongs to the great natural family of the Daisy Flowers (Compositæ), and what we as gardeners call a 'flower' or a 'bloom' is really a flower head or capitulum (*a*) made up of 100 or more separate individual flowers, all neatly arranged into a bouquet-like group, and held in their places by a cup-shaped common calyx or involucre, as shown in this diagram (*b*). In fact, composite flowers are made up on what I may call the paint-brush principle, the florets representing the hair or bristles, and the involucre replaces the supports by which the hairs or component portions are held together, as here shown (*b*). The florets (*c* and *d*) are generally of two kinds, the outer or ray flowers being more or less ligulate (*d*), while the central or disc florets are tubular, as here shown (*c*). The outer or ray florets are female flowers having styles only, and no stamens, but the central or disc florets are hermaphrodite, being furnished with pollen-yielding anthers as well as with pollen-receiving bifid styles (*e*). The anthers (*f*) of

the Chrysanthemum, as of all the members of the composite order, are coherent by their margins or syngenesious, and they are, moreover, proterandrous—that is to say, the pollen is ripe and ready some days before the stigmas of the same flowers are fit for fertilisation. In a word, the Chrysanthemum had ages ago become naturally adapted for cross-fertilisation, and to that fact no doubt is due its variability in nature and in our gardens."

EXHIBITION CHRYSANTHEMUMS.

IN submitting a tabulated analysis of the most successful varieties of the above I must apologise for the long delay which has occurred from circumstances over which I had no control.

Owing to a succession of severe frosts in October, 1888, the record for that year is abnormal and unreliable. Consequently the results obtained may be dismissed in but few words. Among incurred Empress of India still held pride of place, while Bronze Queen and Mrs. N. Davis had both improved upon their previous position; Charles Gibson and Lord Eversley, the only successful novelties, standing at 36 and 41 respectively. In the Japanese section Madame C. Audiguier continued to lead, Edwin Molyneux being a good second, having advanced forty-two places since the previous season. Ralph Brocklebank also rose considerably and tied with Jeanne Délaux. Avalanche and Madame Baco, the latter's first appearance, scored twenty-six and eighteen wins each. Many old favourites have, however, lost ground heavily, notably Grandiflorum, while Bertie Rendatler, Comte de Germiny, Madame de

FIRST FIFTY PRIZEWINNERS OF 1888.

Position in			INCURRED.	No. of Prizes.	Position in			JAPANESE.	No. of Prizes.
1886	1887	1888			1886	1887	1888		
1	1	1	Empress of India	74	2	1	1	Madame C. Audiguier	60
2	4	2	Golden Empress	74	..	44	2	Edwin Molyneux	56
6	5	3	Queen of England	71	8	7	3	Val d'Andorre	50
7	2	4	Lord Alcester	70	7	8	4	Boule d'Or	47
3	6	5	Lord Wolseley	63	1	3	5	Jeanne Délaux	46
5	3	6	Jeanne d'Arc	60	..	15	6	Mr. Ralph Brocklebank	46
16	7	7	Alfred Salter	58	14	2	7	Belle Paule	45
4	11	8	Princess of Wales	54	13	11	8	Criterion	44
8	10	9	Prince Alfred	48	10	4	9	Meg Merrilies	43
13	15	10	{ Emily Dale..... (27) }	46	3	6	10	Mdlle. Lacroix	38
10	12	11	{ Golden Queen... (19) }	43	18	12	11	Baronne de Prailly	36
9	8	12	Jardin des Plantes	36	5	9	12	Fair Maid of Guernsey	35
21	16	13	John Salter	30	41	32	13	Gloriosum	32
17	18	14	Mr. Bunn	29	35	14	14	Madame J. Laing	32
15	14	15	Mrs. Heale	25	..	47	15	Avalanche	26
..	23	16	Lady Hardinge	23	17	21	16	Marguerite Marrouch	26
18	13	17	Bronze Queen	21	22	20	17	Yellow Dragon	25
20	22	18	Barbara	21	9	10	18	Thunberg	22
12	19	19	Mrs. W. Shipman	21	16	17	19	Elaine	21
11	28	20	Princess of Teck	20	..	38	20	Carew Underwood	20
14	20	21	Nil Desperandum	19	24	24	21	Duchess of Albany	18
23	40	22	Cherub	18	..	..	22	Madame Baco	18
28	24	23	White Venus	17	15	16	23	Soleil Levant	18
33	..	24	Princess Beatrice	17	4	13	24	Comte de Germiny	15
36	17	25	Venus	15	6	19	25	Japonaise	15
25	21	26	Empress Eugénie	14	..	..	26	Mons. J. M. Pigny	15
..	31	27	Refulgence	13	27	22	27	Mons. J. M. Pigny	14
35	35	28	Mrs. N. Davis	12	31	34	28	Maiden's Blush	14
34	37	29	Mr. Brunlees	11	44	41	29	Mons. Tarin	13
42	46	30	{ Beverley..... (4) }	9	..	..	30	Mons. Freeman	13
40	33	31	{ White Beverley (7) }	9	19	29	31	Mrs. J. Wright	13
19	9	32	Beauty	9	26	25	32	Mons. Brunet	11
24	41	33	Hero of Stoke Newington	8	43	39	33	Mons. J. Laing	11
29	25	34	Baron Beust	8	..	..	34	La Triumphant	10
41	29	35	Novelty	7	12	23	34	Madame J. Pigny	10
38	44	36	Sir Stafford Carey	6	..	..	36	Mons. Astorg	10
..	..	37	Guernsey Nugget	5	20	31	37	Stanstead White	9
37	26	38	Charles Gibson	5	..	..	38	Comtesse de Beauregard	8
39	27	39	Eve	5	..	..	39	Florence Percy	8
22	32	40	Mabel Ward	5	23	42	40	Mons. H. Elliott	8
..	..	41	Prince of Wales	4	..	..	41	Peter the Great	7
32	..	42	Lord Eversley	4	..	..	42	Mrs. H. Cannell	6
45	43	43	Pink Venus	3	28	28	43	Album Fimbriatum	6
..	..	44	Bronze Jardin	3	..	48	44	Bertie Rendatler	6
26	..	45	Golden Beverley	3	..	..	45	Dormillion	6
..	..	46	Lady Slade	3	..	..	46	Mr. H. Cannell	6
..	..	47	Mrs. Halliburton	3	34	40	47	Mr. Garner	6
43	47	48	White Globe	2	..	36	48	Madame de Sevin	6
..	..	49	Angelina	2	..	..	49	Mdlle. Blanche Pigny	5
46	34	50	Antonelli	2	21	27	50	Amy Furze	5
			Golden Eagle	2				Grandiflorum	5

Sévin, and Peter the Great have also lost caste in prizewinning society.

Nothing very exceptional occurred in the weather of 1889. The summer was hot and the autumn fine, like the present season, which suited the growth of the plants. Cultural conditions were therefore normal.

For the first time since I have kept a record Empress of India has been deposed, and her throne occupied by her handsome offspring. Golden Queen, on the contrary, has, together with Barbara, Mrs. Heale, Mrs. W. Shipman, and Mr. Brunlees, experienced "betterment." As these are all old and well tried varieties their promotion is presumably due to sheer merit. Of the two novelties of 1888, Charles Gibson has greatly and Lord Eversley slightly, improved in position; but Miss Violet Tomlin, who merely tied with Angelina (48) in 1888, we now find at the fifteenth place, and included in twenty-five prizewinning stands. The most phenomenal success, however, is that of the *débutante* Miss M. A. Haggas, who in her first season has compelled "our only general" to share his laurels with her.

Among Japanese the changes are startling, amounting as they do to a social revolution amongst the "mums," Avalanche having in three seasons risen from the bottom of the list to the top, where

it now divides premier honours with Ralph Brocklebank, a recent upstart. Others novelties, such as Sunflower, Etoile du Lyon, and Sarah Owen have been equally triumphant, G. Daniells and Condor also proving themselves dangerous rivals to the older kinds. Indeed the fate of Jeanne Délaux, Madame C. Audiguier, and Comte de Germiny makes one inclined to moralise on the mutability of Chrysanthemum existence, and to exclaim sadly, "How are the mighty fallen!" A remark which also applies, though in a lesser degree, to Belle Paule, Fair Maid, Marguerite Marrouch, Thunberg, Yellow Dragon, and several others. While of former sure prizewinners Fernand Feral and Grandiflorum have now disappeared from the list altogether.

Duchess of Albany, however, again proves its sterling and reliable qualities by maintaining exactly the same position for three seasons out of four. Triomphe de la Rue des Châlets reappears, though in reduced circumstances, after enforced absence in 1888, owing to the frosts of that autumn.

In concluding my analytical remarks I cannot forbear adverting to the evidence afforded by these tables of how surely the new race of sturdy, "stocky," albeit somewhat coarse, growers are, in the struggle for show existence, ousting both the old "mop on a maypole" varieties and those with such miserable constitutions as Jeanne Délaux, &c.—B. D. K.

FIRST FIFTY PRIZEWINNERS OF 1889.

Position in				INCURVED.	No. of prizes.	Position in				JAPANESE.	No. of prizes.
1886	1887	1888	1889			1886	1887	1888	1889		
7	2	3	1	Lord Alcester	58	...	47	15	1	Avalanche	51
1	1	1	2	Empress of India	57	...	15	6	2	Mr. Ralph Brocklebank	51
6	5	3	3	Queen of England	53	7	8	4	3	Boule d'Or	50
2	4	2	4	Golden Empress	52	...	44	2	4	Edwin Molyneux	48
6	7	7	5	Alfred Salter	40	1	3	5	5	Jeanne Délaux	39
13	15	10	6	{ Emily Dale (19) }	39	2	1	1	6	Madame C. Audiguier	39
4	11	8	7	{ Golden Queen (20) }	37	10	4	9	7	Meg Merrilies	38
5	3	6	8	Princess of Wales	35	...	...	...	8	* Sunflower	36
3	6	5	9	Jeanne d'Arc	32	8	7	3	9	Val d'Andorre	34
...	...	...	10	Lord Wolseley	32	...	...	22	10	Madame Baco	29
18	13	17	11	Miss M. A. Haggas	31	6	9	25	11	Japonaise	25
17	18	14	12	Barbara	31	35	14	14	12	Madame J. Laing	25
9	8	12	13	Mrs. Heale	30	41	32	13	13	Gloriosum	24
12	19	19	14	John Salter	29	...	...	36	14	Stanstead White	24
...	...	...	15	Princess of Teek	25	3	6	10	15	Mdlle. Lacroix	23
15	14	15	16	*Miss Violet Tomlin	23	...	38	20	16	Carew Underwood	22
20	22	18	17	Lady Hardinge	22	...	...	...	17	† Etoile de Lyon	21
8	10	9	18	Mrs. W. Shipman	22	...	...	...	18	† Sarah Owen	21
35	35	28	19	Prince Alfred	20	14	2	7	19	Belle Paule	19
19	9	30	20	Mr. Brunlees	17	18	12	11	20	Baronne de Prailly	18
36	17	25	21	Hero of Stoke Newington	16	13	11	8	21	Criterion	18
11	28	20	22	Empress Eugénie	16	5	9	12	22	Fair Maid of Guernsey	18
10	12	11	23	Nil Desperandum	14	9	10	18	23	Thunberg	17
25	21	26	24	Jardin des Plantes	14	24	24	21	24	Duchess of Albany	15
28	24	23	25	Refulgence	13	...	...	30	25	Mrs. J. Wright	15
14	20	21	26	Princess Beatrice	12	...	...	...	26	Mons. Bernard	14
21	16	13	27	Cherub	11	...	...	45	27	Mr. H. Cannell	13
...	31	27	28	Mr. Bunn	11	11	5	...	28	Triomphe de la rue des Châlets	13
...	...	36	29	Mrs. N. Davis	10	...	...	...	29	George Daniels	11
...	23	16	30	Charles Gibson	7	20	31	37	30	Comtesse de Beauregard	10
24	41	31	31	Bronze Queen	6	17	21	16	31	Marguerite Marrouch	10
37	26	37	32	Baron Beust	6	...	...	...	32	Condor	9
39	27	38	33	Eve	6	26	25	32	33	Mons. J. Laing	9
23	40	22	34	Mabel Ward	6	...	...	26	34	Mons. J. M. Pigny	9
38	44	35	35	White Venus	5	4	13	24	35	Comte de Germiny	8
29	25	32	36	Guernsey Nugget	5	...	...	38	36	Florence Percy	8
40	33	29	37	Novelty	4	...	...	...	37	Lady T. Lawrence	8
47	...	...	38	Beauty	4	22	20	17	38	Yellow Dragon	8
...	...	...	39	Lady Carey	4	...	...	...	39	Marsa	7
22	32	39	40	Lord Eversley	4	...	36	48	40	Mdlle. Blanche Pigny	7
49	...	...	41	Prince of Wales	3	27	22	27	41	Maiden's Blush	7
...	...	49	42	Nonpareil	2	...	...	...	42	Pelican	7
45	43	43	43	Antonelli	2	...	...	...	43	Stanstead Surprise	7
46	34	...	44	Bronze Jardin	2	...	...	42	44	Album Fimbriatum	6
...	...	...	45	Golden Eagle	2	16	17	19	45	Elaine	6
46	45	...	46	H. Shoemith	2	19	29	31	46	Mons. Brunet	6
...	...	...	47	Isabella Bott	2	...	...	...	47	Frederick Marrouch	5
31	39	...	48	Mrs. Cullingford	2	...	...	...	48	Mrs. Faleoner Jamieson	5
...	...	...	49	Mrs. G. Rundle	2	...	...	41	49	Mrs. H. Cannell	5
32	...	42	50	Perle Précieuse	2	...	...	...	50	Fimbriatum	4
				Pink Venus	2						

* Won two prizes in 1888.

* Won two prizes in 1888.

† Won three prizes in 1888.

‡ Won five prizes in 1888.

CHRYSANTHEMUM NOTES.

THE WILLIAM HOLMES' MEMORIAL FUND.

A MEETING of the Committee appointed to deal with the above fund was held in the Royal Aquarium, Westminster, on October 23rd, Sir Guyer Hunter, M.P., in the chair; when after consideration of the numerous suggestions as to the form the memorial should assume, the following resolution was unanimously adopted:—"That a portion of the fund raised be set aside for assisting the technical education in landscape gardening of the late Mr. W. Holmes' eldest son, and that the remainder be awarded as prizes or medals at the exhibitions of the National Chrysanthemum Society, and at those of affiliated societies."

Sir Guyer Hunter was appointed Chairman, and Mr. R. Ballantine Treasurer, with Mr. Lewis Castle, Hotham House, Merton, Surrey, as Honorary Secretary, to whom all subscriptions and communications should be addressed. Circulars and subscription forms will shortly be issued to all members of the National Chrysanthemum Society, the affiliated societies, friends of the late Mr. Holmes, and everyone who is desirous of helping in a good cause.

AMONGST THE CHRYSANTHEMUMS.

FOR a dozen years or more I have made annual tours amongst all the best Chrysanthemum collections in the home counties and elsewhere, and it has become one of the most pleasant tasks of the year to visit old friends, compare the present condition of the plants with the past, to note the advance of younger growers, and to observe the respective merits of the various novelties as they appear. These excursions are usually performed a week or two before the rush of the shows commences, a time that most who are interested in Chrysanthemums select for similar inspections. All are anxious to know the prospects of the season, and intending rival competitors make frequent journeys to each other's collections with a mutual friendliness that is most commendable. Certainly, notwithstanding the keen competition now prevailing, there is less ill-natured jealousy in the ranks of Chrysanthemum growers than amongst some other groups of florists. The best growers and most successful exhibitors willingly relate their experiences and their failures to their rivals, and it is this generous feeling which has so greatly assisted in elevating the tone of Chrysanthemum societies and shows. There are, of course, instances to the contrary, but they are exceedingly rare, and I have no hesitation in asserting, from an intimate and extensive knowledge of the men so engaged and the modes adopted, that in strict honesty of competition the Chrysanthemum exhibitors will bear most favourable comparison with any horticultural or other shows.

Around the metropolis this year the plants are looking extremely promising, and not, perhaps, quite so early as in some previous seasons. Mr. Gibson, at Morden Park Gardens, has an excellent collection, and is strong both in Japanese and incurved, all the blooms looking clean and developing freely. Mr. Richings, The Brandries Gardens, Beddington, is likely to do himself substantial credit, for his blooms are of excellent quality, and the plants well grown. At the residence of Philip Crowley, Esq., Waddon House, Croydon, his gardener (Mr. King) has a fine houseful of plants, that will not, however, be at their best for a week or two yet. At Teddington Mr. W. Furze has the principal collection, but there are several others in the neighbourhood, also at Twickenham, concerning which something will be said later on. At Isleworth too Mr. Pears is making a speciality of the Chrysanthemum, and good results may be expected. The trade collections of Messrs. Laing & Sons, Veitch & Sons, N. Davis, G. Stevens, J. Carter & Co., R. Owen, W. Jones, and others will also attract many visitors, and some general notes respecting these and many others must be reserved for next week. It must suffice for the present to say that all the growers about London are hopefully expecting a capital season, notwithstanding "the damping," which is already beginning its disastrous work.—L. CASTLE.

CHRYSANTHEMUMS AROUND LIVERPOOL.

THE season has arrived when most of our principal growers around Liverpool are watching with great eagerness the expansion of their blooms. I question if there is any part of England where the Chrysanthemum is more highly prized than it is around Liverpool, and it matters not where you go, in places large or small, you always find a certain amount of prominence given to the queen of winter. And rightly so, for what could we get at this dull season of the year to give us the wealth of bloom and infinite variety of colour? Liverpool growers have made their mark, and such men as Tunnington, Lindsay, Faulkner, Jellicoe, Fox, Roberts, and Mease, when with us, have to a great extent been pioneers in the movement which had for its object the higher cultivation of the Chrysanthemum. We have, in addition to those I have mentioned, many more equally as good, and on all sides energetic men are rising up who will in a short time be able to hold their own against all comers. The number of growers is increasing, and the general question at the present time is, "How are your blooms?" I think the year will be hard to remember when we have ever had a better promise of bloom than at the present. On every hand the one opinion is that they are grand. In many cases the plants are dwarfer than usual, the foliage is good, and mildew has not made its appearance to any great extent; but I am afraid the dense fogs we experienced during the early part of last week must have wrought some havoc, but as yet not many complaints have reached me. I have been privileged during the last few days to see some of the collections here, and as the area is so extended it is a difficult matter to see all. I am conscious that there are many collections grown where, if the gardeners were allowed to exhibit, their record would be excellent. I have also

seen some of the newer varieties, which promise to be acquisitions; but as this is only a preliminary note I shall reserve my notes on collections I have seen and newer varieties for a future issue.—R. P. R.

THE CENTENARY AND THE AFFILIATED SOCIETIES.

THE Centenary festival to be held at Westminster on November 11th seems to me an opportunity which should be made the most of for further strengthening that good feeling now existing amongst the various societies. The provincial societies, as a rule, have much respect and admiration for the N.C.S., mainly on account of its spirited policy and the able manner in which its business is conducted. The continued increase in the number of affiliated societies and the success of the provincial shows are sufficient proofs of this, and there can be little doubt that so long as the popularity of the Chrysanthemum remains as strong as at present, and the management of the N.C.S. continues to be efficient, that success will continue.

What, then, I think now is required is that Centenary meetings should be rendered, as far as possible, a "gathering of the clans," or, in other words, a bringing together of the principal officials and Chrysanthemum growers from each affiliated society to take part in the celebration, and to meet together at a grand conversazione or conference, to be, if possible, presided over by the esteemed noble President of the N.C.S., supported by all its leading officials. Towards effecting this I would suggest that the Committee of the N.C.S. take into consideration firstly, the granting of a free pass for the exhibition and meetings to all fully accredited visitors from affiliated Societies; secondly, that the various railway companies be approached from the N.C.S. with the object of obtaining cheap fares to and from the exhibition; and thirdly, that something be done towards providing good and cheap lodgings, especially for such as are strangers in the metropolis, and who will wish to stay at least one night. Other matters there would be also to be considered which would occur to the Committee, such as arranging for sending a circular letter to each affiliated society stating what was thus being done, and inviting delegates from each such Society. I am of opinion such would meet with a hearty response, and would bring about such a meeting together of Chrysanthemum specialists as would most effectually serve to celebrate the Centenary, also causing pleasant recollections for many years to come.

THE AFFILIATED SOCIETIES' CLASS.

THE following suggestions for the future working of what is known as "The Affiliated Societies' Class" at the November shows of the N.C.S. may be worthy of consideration. This very commendable class (which had its origin in the fertile brain of the late respected Hon Sec., Mr. Wm. Holmes), is strongly commended by every one with whom I have conversed upon the subject. As at present it is but in its infancy, and being so entirely novel in character, it is scarcely surprising that it has not as yet proved the unqualified success its energetic promoter would wish to see it. To attain such success I believe the opinions and feelings of provincial growers and affiliated societies upon the subject requires to be obtained, and, as far as may be practicable, their ideas met. The *Journal of Horticulture*, circulating as it does amongst all the leading growers throughout the kingdom, is an excellent medium for bringing before them any new ideas upon the subject.

I would then suggest to the Committee of the N.C.S. that in the first place a circular letter be sent to each affiliated society, asking for opinions and suggestions, such, when received, to be fully considered by the Committee of the N.C.S. I am of opinion that the principal show of the N.C.S. should be of a character entirely distinct from any held by its affiliated societies, also that it should, as far as possible, represent the combined strength of such societies, and that to this end the class under consideration be made the most important one in the schedule.

One of the main causes which goes to prevent societies at a considerable distance from London sending exhibits and representatives to compete in this class is the expense to be incurred, and the doubts as to being recouped in such by prize money. I would suggest that none be offered, but that in lieu thereof the railway, and such other unavoidable expenses of each exhibitor as can be readily met, be paid by the N.C.S. The challenge shield might still continue to be the principal prize competed for, but that in addition there be at least three certificates, first, second, and third prizes, each to be well framed before presentation in a manner suitable for permanent hanging in the meeting room of the society winning it. The class also might be a little extended, in that a limited number of reflexed and Anemone flowers might be admitted, which would give to it really more of a representative appearance and character than at present.—W. K. W.

FRAGRANT CHRYSANTHEMUMS.—MISS DAVIS.

IN a house which I have filled with the best varieties of October flowering Chrysanthemums, grown for stock purposes and for supplying cut flowers in quantity, and which are now a dense mass of bloom, many visitors have remarked the agreeable perfume, adding that they were not before aware that Chrysanthemums were fragrant. On making examination this afternoon as to which amongst the numerous varieties gave off this pleasant odour, I found it to be the new pink sport from Mrs. Cullingford, Miss Davis, which is with me most distinctly Violet-scented. Such is not the case with the parent variety, nor indeed with any of the other varieties now in flower in the same house. Irrespective of its sweet perfume, Miss Davis is a valuable and beautiful variety, standing out amongst the others as one of the most distinct, pleasing, and effective. The flower is the exact shape of Mrs. Cullingford, and a most pleasing shade of pink.

CHRYSANTHEMUM PURITAN.

SEVERAL very promising novelties were exhibited at the meeting of the National Society's Floral Committee on October 15th last, and

so numerous, the merits of this one are so boldly marked that it will be certain to become a favourite. The florets are substantial, broad, somewhat incurved at the top, and of a peculiar glossy white colour,



FIG. 44.—JAPANESE CHRYSANTHEMUM PURITAN.

amongst them were handsome blooms of the Japanese Chrysanthemum Puritan from Mr. E. Molyneux, Swanmore Park Gardens, Bishops Waltham. A first-class certificate was unanimously awarded for this, an honour it well deserved, for though white Chrysanthemums are now

the surface having quite a polished appearance. The bloom is of good size, and the plant seems strong in habit. It is of American origin, and has been cut a year or two, but is not much known in this country.

THE BECKETT CHRYSANTHEMUM CUP AND TUBE.

THE cup and tube illustrated in fig. 45 is an invention by Mr. Edwin Beckett, Aldenham House Gardens, Elstree, and possesses several important advantages. The following references will explain the construction and mode of action :—It consists of tubes A B C, shown in the accompanying sketch. The tube A is the water container ; into and upon the top of A the tube B fits in such a manner as to prevent loss of water ; inside B and outside cup C is formed a serew, C screwing inside B. The result of such an arrangement is the easy and effective regulation of

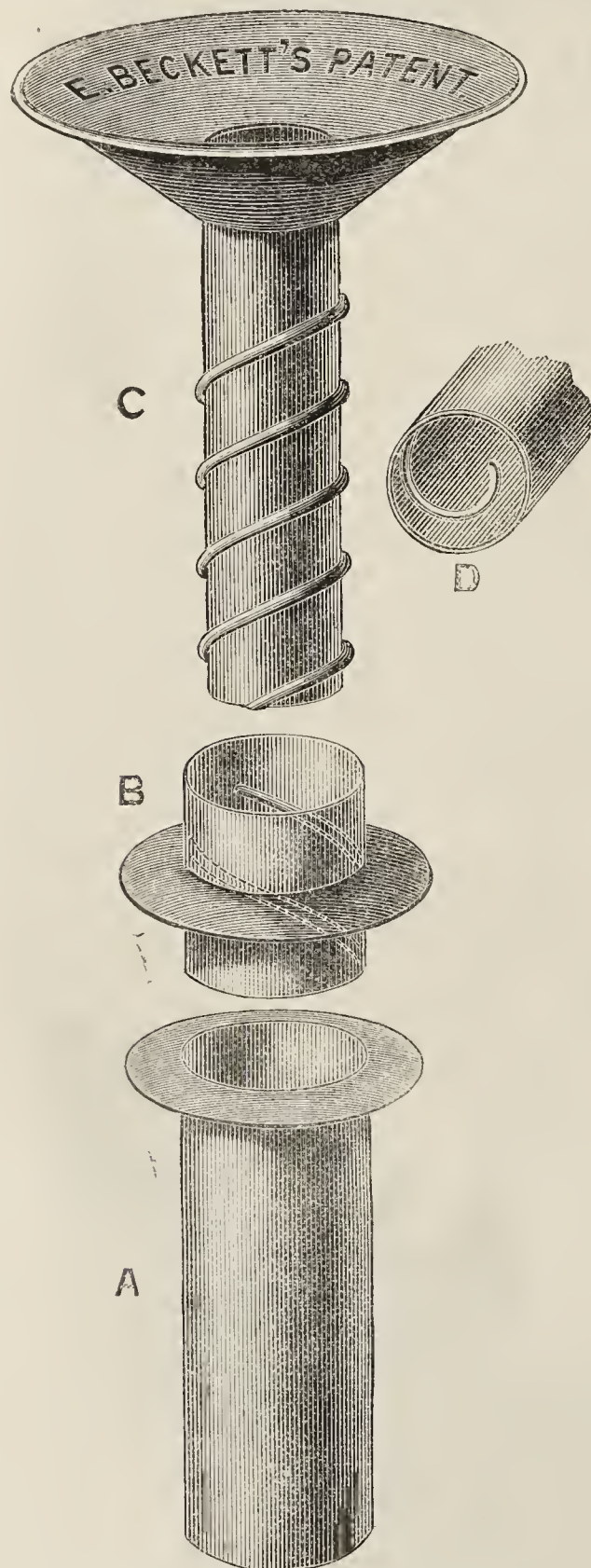


FIG. 45.—THE BECKETT CHRYSANTHEMUM CUP AND TUBE.

height of the flower cup C. At the bottom of the cup C is fixed a spring clip, a simple and effective method of securing the stem of the bloom as desired, plugging, &c., being thereby dispensed with.

WREATHS OF CHRYSANTHEMUMS.

THE illustration on page 379, sketched by our artist at the National Chrysanthemum Society's Exhibition, St. Stephen's Hall, Westminster, last year, affords some idea of what can be effected by a tasteful disposal of Chrysanthemum flowers with Grasses and appropriate foliage. Japanese varieties, orange or red, look well alone or in combination with white varieties for this work, especially under artificial light.



EVENTS OF THE WEEK.—The Chrysanthemum Shows commence next week on Monday next, November 4th, at Ipswich, Brixton, and that at Blackheath by the Kent County Society. These will be followed on Wednesday, November 5th, by Portsmouth and Tooting, and on Thursday, November 6th, by Putney. The succeeding week will however, be the busiest of the season.

— THE WEATHER.—A decided change has occurred during the last few days, and winter has come at last. It is welcomed by growers of Chrysanthemum blooms for sale, for from all sides we have heard lately they “made nothing,” because outside flowers have been so plentiful. They are over at last in the majority of gardens, as we hear of frost, snow, and hail from many districts. A Stirling correspondent states that no heavier fall of snow fell in the district all last winter than fell on Sunday last. There was a sudden change on Wednesday, which was quite mild.

— OVERMATTER.—This is a term which applies to articles in type that are crowded out of the number for which they were intended. Though the present issue of the *Journal of Horticulture* is devoted mainly to Chrysanthemums, we have still more awaiting publication with many other valuable articles on various subjects, the publication of which will not be long delayed. We thank all our coadjutors for their effective aid, and bespeak their patience, as well as their co-operation, during the Chrysanthemum season.

— FRUITERERS' COMPANY'S GUILDHALL EXHIBITION.—I have much pleasure in informing you that the Fruiterers' Company at their Court held on the 20th inst. decided to confer the freedom and livery of the Company upon the following gentlemen : Mr. George Bunyard, Mr. Joseph Cheal, Mr. Shirley Hibberd, Mr. T. F. Rivers, Mr. A. H. Smee, and Mr. J. Wright. This distinction has been conferred in recognition of the able services which these gentlemen have rendered to the Company as members of the Executive Committee having the management of the recent Exhibition, and has not been conferred on anyone except Sir James Whitehead during the past thirty years. This information will probably be of interest to some of your readers.—O. C. T. EAGLETON, Clerk.

— THE UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—The annual dinner of the members and friends of this admirable Society was held at the Cannon Street Hotel on Thursday evening last, E. R. Cutler, Esq., presiding. The room and tables were beautifully furnished with plants and flowers contributed by Messrs. Cannell and Laing, and Mr. Chard's floral arches had a charming effect. We can only, for obvious reasons, refer to the proceedings in the briefest possible manner. Mr. Cutler met with a warm reception and fulfilled his duties in a manner which gave complete satisfaction. After proposing the loyal toasts he referred in terms of the highest approval to the Benefit and Provident Society, and highly commended it to the notice of gardeners and their employers. Amongst the other speakers during the evening were Messrs. H. J. Veitch, N. Sherwood, G. Bishop, J. Hudson, N. Cole, G. Anderson (of Sydney), Wright, Moss, Laing, Nutting, Wynne, and Collins, who either proposed or responded to the different toasts. Miss Mary Belval and her talented assistants met with warm applause as vocalists, and the ladies were presented with choice bouquets. About 160 persons sat down, and the gathering was regarded as the most successful yet held of this ever growing and most worthy Institution. Mr. George Cavendish was nominated by the Chairman to preside on the next occasion.

— PETROLEUM AND FRUIT TREES.—Mr. J. W. Ledger writes :—“I notice in last week's *Journal* an inquiry from “Beta” repeating American blight on Apple trees. My Apple trees had it badly last year, so much so that my then head gardener, an experienced man, since dead, painted them so with paraffin that he has killed some of the trees and greatly injured others. I fear they will not recover ; so be good enough to warn your correspondent to be careful with petroleum.” [We are obliged by this experience. We never advise the use of undiluted petroleum. The mixture recommended to “Beta” on another page is safe for trees in a resting state and effectual.]

— **THE BIRMINGHAM GARDENERS' ASSOCIATION.**—The Committee, in arranging their autumn fortnightly meetings, determined to devote a night occasionally to the exhibition of specimens, discussion, and answering questions, and the plan answered admirably. On the last meeting night, the 20th inst., there was a good attendance of members, and many objects of interest were exhibited, and much information elicited.

— **RANUNCULUSES IN OCTOBER.**—A charming display of these in October is somewhat of a novelty, and very beautiful they were, as seen at the meeting of the Birmingham Gardeners' Association, above referred to. Mr. Vertegans sent them, and the information was given that the roots were planted in July, covering to the depth of $1\frac{1}{2}$ inch, and the damp weather of the latter part of the summer appears to have been very congenial to them. The usual time for planting is in February or March, but in this case planting was delayed until July. The orthodox plan of planting with our old florists in years gone by was an average depth of $1\frac{1}{2}$ inch, in well prepared soil, and covering with good soil. In this instance very little preparation was made for planting.—D. S. H.

— **ANTHRACITE COAL.**—We are reminded by a circular on the Hendreforgan Anthracite Coal, which is being advertised from 23, Lime Street, London, of its great economic value for horticultural purposes, as well as of its smokeless character. This coal is being more and more used in gardens and nurseries as its merits become more fully known.

— **VIENNA EXHIBITION AWARDS.**—Messrs. J. Jensen & Co. (Ld.) write:—"We have the pleasure to inform you that at the Vienna International Exhibition of this year we have gained the highest award for all our exhibits—viz., guanos, cattle oil, medicinal, cod-liver oils, trade oils, liquid glue, &c., &c. We shall be glad if you will notify this in your next issue for the benefit of your numerous readers."

— **LEICESTER CHRYSANTHEMUM CONFERENCE.**—On Thursday evening last, at a largely attended meeting at Leicester, papers on the damping of blooms, also on dressing and staging them for exhibition, from Messrs. J. Wright, J. Udale, W. Tunnington, and others, were read by Mr. W. K. Woodcock. Some of these papers we publish this week, others being held over till space is available.

— **CHRYSANTHEMUMS JOHN LAMBERT AND JOHN DOUGHTY.**—A young exhibitor is anxious to know if the above varieties are considered distinct from the older forms of the Queen family. With him John Lambert is not distinguishable from Golden Queen, and John Doughty is lighter and of better form than Bronze Queen. What do old growers say to the young man?

— **SWANSEA CHRYSANTHEMUM SHOW.**—A show is advertised to be held at Swansea on November 19th and 20th, and we are requested to direct attention to the first schedule. We do so with pleasure, and pronounce it a very good beginning, the chief class, open, being for forty-eight blooms, with amounts of £8, £5, and £4 offered as prizes. There are other open classes. Messrs. T. Kneath and W. Roberts, The Uplands, Swansea, are the Honorary Secretaries. We wish the new Society success.

— **STRAWBERRIES IN OCTOBER.**—This autumn has indeed been a wonderful one, for we have enjoyed finer weather than any we have had during the summer. The effect of it on one variety of Strawberry alone has been that I have, during the last fortnight, been able to pick about a peck of fruit in an open exposed field. Had the weather continued mild I should have picked as many more, but the severe weather which has now (October 27th) set in will, I am afraid, stop all further picking. There is plenty of green fruit hanging, and three fine days would have coloured a good proportion of it. I grow several varieties, but one alone has flowered and fruited, and that is Vicomtesse H. de Thury. Noble, which is an earlier Strawberry, has not opened a single blossom, although in a more sheltered position. My crop of Vicomtesse will, no doubt, be considerably crippled for next summer. This is to be regretted, although the fruit has come in very acceptable just now, when we do not usually look out for Strawberries. I must say that picking the fruit to-day, with the wind so bitterly cold that I had to leave my occupation to put on winter flannels before I could finish, was quite a novel experience. I do not know whether others have had the same results with any variety of Strawberry at this season, but if so it would be interesting to learn the particulars.—H. S. EASTY.

— **TESTIMONIAL TO MR. MCKELLAR.**—Mr. McKellar's friends in and around Kelso gave him a dinner last Thursday in the Queen's Hotel, under the presidency of Mr. W. Thomson of Clovenfords, when a very handsome gold watch was presented to him, and a gold bracelet to Mrs. McKellar. The young men in the gardens at Floors Castle presented her with a silver cake basket, and the labourers with a silver dessert knife. Much regret was expressed by all present at the dinner that they were losing Mr. McKellar as a neighbour, but they were proud to think that he was the third gardener from Floors that had been selected by Royalty, and they felt certain that his management of the gardens at Sandringham would do him the same credit those of Floors had done. On the Wednesday evening a supper was given to Mr. Barnes, who has been Mr. McKinlay's foreman for some years, on which occasion a handsome silver watch and suitable inscription was presented to him in token of the respect entertained for him. Mr. Barnes is a native of Devonshire, and leaves Floors at the same date as Mr. McKellar.



FIG. 46.—A WREATH OF CHRYSANTHEMUMS. (See page 378.)

— **FRUIT CULTURE.**—Sir James Whitehead having been interviewed by a contributor to "Trade, Finance, and Recreation" on the subject of fruit culture in England, he explained that the chief idea of the Fruiterers' Company is to supply to farmers and cottagers the knowledge that will enable them to produce a variety of good Apples, Pears, and Plums from trees that are at present comparatively unproductive owing to the lack of instruction in such matters as suitable soil, situation and aspect, pruning and grafting. As a rule the trees are stuck in holes and left to take their chance. Sir James believes that the value of fruit as an article of diet is becoming recognised more and more every day. He finds that he can work on a fruit diet as well as on any other, though he is not a vegetarian. "England is the home of the Apple," he remarked, and the very best kinds can be produced here notwithstanding the outcry about climate. As to the mode of imparting the necessary instruction to small growers, he advocates the plan of giving lectures in different parts of the country, with practical illustrations of planting, pruning, grafting, &c. Annual shows, too, would tend to popularise the idea. But the crux of the whole question lies in the terms of land tenure. To meet this Sir James thinks that unless the landlords are prepared to give longer leases they themselves should plant the trees, making it a condition that the tenant should keep them in good bearing order. The Government is believed to be willing to make grants to agricultural colleges where horticulture is taught, as well as to horticultural colleges. That the nation has begun to make real progress is an article of faith with the worthy baronet, who believes, with many others, that nationally we eat far too much meat and not nearly enough fruit.

— THE general Committee of the NATIONAL CHRYSANTHEMUM SOCIETY held a meeting at Anderton's Hotel, Fleet Street, on October 27th, R. Ballantine, Esq., in the chair, when there was a good attendance of members. The principal business was completing the arrangements for the Centenary Festival at the Royal Aquarium, Westminster, on November 11th, 12th, 13th, and 14th. Lady Brooke will open the Show on November 11th. Lord Brooke will preside at the banquet on November 13th; and Sir Guyer Hunter M.P., with Sir Edwin Saunders, will preside at the Conference on the first and third days.

— DEATH OF MR. THOMAS CUBBON.—It is with regret that I report to your notice the death of Mr. Thomas Cubbon, gardener to G. H. Pinckard, Esq., of Coombe Court, Witley, on the 17th inst., at the early age of thirty-six years, after a few days' illness. He had been at the above place for the past fourteen years, during which time he had made a large circle of friends, by whom he was greatly respected. He was also a very successful exhibitor at the local shows, and by his death quite a gloom will be cast over the Godalming Chrysanthemum Show, where he had exhibited largely since the commencement, some six years since.—G. B. BASKETT.

— AMATEUR ROSE EXHIBITORS.—"F. R. B." has perhaps sufficiently answered "Exhibitor," but I want to ask him one more question. He says, "Large growers, being amateurs, growing say 8000 Roses, ought to be compelled to exhibit against nurserymen." Now the largest number of Roses I have ever heard an amateur accused of growing, and I believe it to be a false accusation, is 10,000, and I ask "Exhibitor" what probable chance would that amateur have against nurserymen, growing above 100,000, early in the season? True, Mr. Pemberton and other amateurs have been successful later in the season. Never have I heard of an amateur beating the professional for 72, 48, 36, or 24 before 20th of July in any year. Remember, from June the nurseryman is cutting for sale blooms by the 1000 every day as well as for exhibition, and therefore he may occasionally be surpassed by an amateur without loss of reputation or less glory to his visitor. I do wish, however, that local, especially affiliated societies, would more strictly follow the model of the National Rose Society in arranging their schedules.—F. H. G.

— LOCAL ROSE EXHIBITIONS.—Replying to your correspondents with regard to the statement I made as to the number of plants and acreage cultivated by large growers, I regret to say from what has appeared that I have been strangely misinformed; but, however, by way of argument we will say if an exhibitor cultivates 7000 plants, are not the odds very great against the smaller growers who cultivate from 1000 to 2000? If so, then I say they ought to be protected by being fairly handicapped. This is the bone of my contention. If you take, as an instance, a race of any description you will find the competitors are fairly handicapped. Why ought it not to be so in the showing of Roses? The fact is the matter requires, in my opinion, to be carried out on a more equitable footing, and until it is there will be complaints. Mr. Raillem says there is protection in all the classes of the National Rose Society, but if he will look over the schedule again I think he will find a few discrepancies. It matters not how great a grower or how great an exhibitor he may be, it is optional if he think fit to infringe upon the classes allotted to the small growers. "F. R. B." says that I complain of the unfairness of the leviathans showing against the smaller fry, and asks if it has ever occurred when there are large classes available, and adds the exhibitor ought to be ashamed of himself for stooping so low. I think I may venture to say that one of the greatest exhibitors who has taken perhaps more prizes than any other amateur exhibited a stand of six blooms at Birmingham when there were two classes of twelve available—one open, the other amateur; so I think it proves that the large grower chose to compete for six instead of twelve, it giving him a better chance for the prize than the small growers, who evidently cannot have so many to select from, and this provides loopholes sufficiently large for ambition to creep through. Again, Mr. Raillem infers that a man with 1000 Roses ought to be able to show at his best as good a twenty-four as the man with double or treble that number. I was never more surprised than by such reasoning. I think any schoolboy would say that three chances are better than one, and I take it that the object of growing a large number of Roses must be to have more to select from, and therefore this increases the chances in competing with smaller growers. Rose shows may be and undoubtedly are protected as a rule in the southern counties, but I do know from my own experience several places in the northern counties are not so.—AN EXHIBITOR.

CHRYSANTHEMUM MEN OF THE TIME.

HAVING on a previous page referred to a Chrysanthemum pioneer, Mr. Robert Fortune, we now give a series of portraits, chiefly from recent photographs, which reached us in time for preparation, of men of action in the Chrysanthemum world, and as we expect more will be supplied to us for publication during the season, we clear the way for their insertion as opportunities occur. Those now given are of men who merit recognition for their zeal as officers or skill as cultivators. They are not chosen as exceeding in effort or cultural ability all other Chrysanthemum men of the time, and we know that every one of those portrayed would resent any such proposition. With the pressing claims on our space we can say little about them, but that little will show that they are workers who in their different spheres have done something in widening the interest in Chrysanthemums—making brighter the homes of rich and poor, and providing the public with autumn floral festivals, which are so highly appreciated, and can do nothing but good.

MR. E. DRAPER (Northampton).—As Secretary of the Northampton Society Mr. E. Draper has performed excellent service, and has infused much of his natural energy into the business and knowledge of the Society. Chrysanthemums are very popular in Northampton, and nearly everyone who can accommodate a few plants tries to do so, and soon becomes a competitor in some of the classes wisely provided by the Society for the encouragement of beginners.

MR. W. FURZE (Teddington).—When in 1889 Mr. W. Furze of The Roselands, Teddington, succeeded in winning the challenge vase at Kingston, there was considerable rejoicing in the district, and it is questionable if even the defeated competitors did not experience some satisfaction at the result. Chrysanthemums have for some years been admirably grown at The Roselands, and Mr. Furze has been ably assisted by his gardener, Mr. Coombs, for in the moderate space of a suburban garden Orchids under glass and Roses out of doors are as well cultivated as the Chrysanthemums. The example thus set of general horticultural enthusiasm has had considerable influence in the district, and the effects are rendered evident at the creditable summer and autumn Shows now held in Teddington.

DR. GEORGE WALKER (Wimb'edon).—With Mr. Lyne, late of Belvedere Gardens, Dr. G. Walker has for some time been associated as joint Honorary Secretary of the Wimbledon Horticultural Society; but Mr. Lyne has now removed to Chislehurst, and the duty has, therefore, devolved upon his colleague. Dr. Walker is not merely an admirer of Chrysanthemums, but he is also a cultivator, and his modest but interesting display attracts many visitors during the season. He is also a frequent visitor at the principal shows and gardens in the neighbourhood of the metropolis where Chrysanthemums are a specialty.

MR. LINNÆUS CUMMING (Rugby).—Mr. Cumming devotes all the time he can spare from his scholastic duties at Rugby to gardening, and is an earnest amateur, with all the enthusiasm that an educated man brings to bear upon such work. He is noted here because his position as Chairman of the Rugby Society has enabled him to encourage a love of Chrysanthemums and their culture, and at the dinner on the Show day he always has some cheery words for the Committee and the exhibitors. The Secretary, Mr. W. Bryant, who is thoroughly practical and experienced, has also assisted greatly in promoting the interests of this Society. In Mr. Cumming's town garden he grows alpine plants, Ferns, &c., remarkably well.

MR. F. POWER (Portsmouth).—Mr. Power is a great deal more than Secretary of the Portsmouth Chrysanthemum Society, for he is a Town Councillor, and in many ways has by his labours contributed to the improvement of the great seaport, and won the esteem of its inhabitants. He believes in the popularisation of flowers, and therefore brings the charges for admittance to the great Chrysanthemum shows, which he has been mainly instrumental in establishing, within the reach of the humblest toilers. The consequence is, that we believe the attendance exceeds that of any other similar exhibitions in the kingdom, and the Society is in a sound financial state.

MR. W. MEASE (Leatherhead).—In Mr. Mease we have an able energetic gardener, and unquestionably a first-rate Chrysanthemum grower. He has engaged in some of the keenest of the Liverpool contests, and won; also he is distinguished as the winner of one of the great challenge cups that are offered by a few Chrysanthemum societies. This was at Hull, and no man had finer losing stands of blooms to compete against than he had in those contests. He is now established at Leatherhead in Surrey, and made a good start last year at southern shows. He has proved himself a formidable antagonist, and if he takes part in the coming campaign the classes will not be weak if he is placed outside the circle of prizewinners.

MR. W. TUNNINGTON (Liverpool).—For many years Mr. Tunnington was a leading grower in the Liverpool district, where Chrysanthemums have long been produced in the highest excellence. It was only by years of persevering effort that he won the high position he occupied in the front ranks. He may fairly be regarded as a representative Liverpool grower, and there is no doubt whatever that the splendid incurred blooms which he brought to Kingston some years ago had a



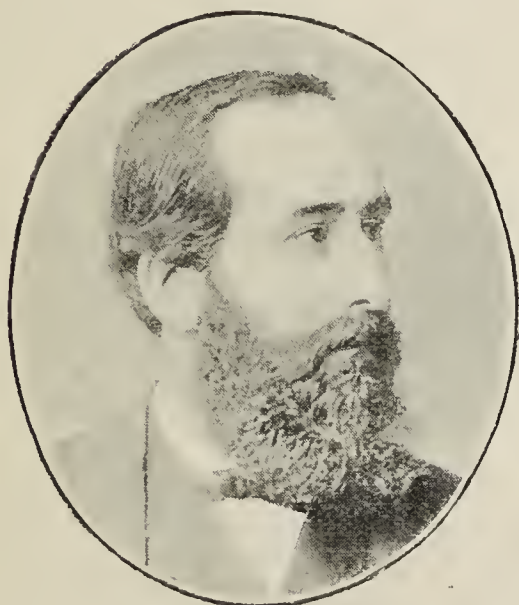
MR. E. DRAPER
(Northampton).



MR. W. FURZE
(Teddington).



DR. G. WALKER
(Wimbledon).



MR. LINNAEUS CUMMING
(Rugby).



MR. F. POWER
(Portsmouth).



MR. W. MEASE
(Leatherhead).



MR. W. TUNNINGTON
(Liverpool).



MR. G. WOODGATE
(Kingston).



MR. N. DAVIS
(Camberwell).

FIG. 47.—CHRYSANTHEMUM MEN OF THE TIME.

stimulating effect on southern growers, and at the same time his eyes were opened on the capabilities of the Japanese, and these were subsequently grown as well around Liverpool as in the metropolitan district. Mr. Tunnington has done enough as an exhibitor, and retired from competition, and his services are now in demand as a Judge at shows.

MR. G. WOODGATE (Kingston-on-Thames).—At the death of Mr. Jackson, Secretary of the Kingston Chrysanthemum Society, which during his period of office had taken so high a place amongst similar societies; Mr. G. Woodgate, The Gardens, Warren House, Kingston, was unanimously appointed his successor. Perhaps no greater compliment could be paid to him than by recording the fact that he has well maintained the credit of the Society, and has won the confidence and esteem of all his colleagues. Mr. Woodgate is an experienced horticulturist with wide practical knowledge, he grows Chrysanthemums well, and keeps an extensive garden in admirable condition.

MR. NORMAN DAVIS (Camberwell).—As a Chrysanthemum specialist Mr. Davis has rendered his name familiar to growers throughout Great Britain, and he possesses an exceptional critical knowledge of the varieties cultivated within the past twenty years, for he has made them the subject of close study. Mr. Davis commenced as an amateur grower of Chrysanthemums when a mere youth, and had gained some years' experience before he made them his business. Even then the beginning was very modest; he gradually advanced, however, and at last removed to the Lilford Road, where he has grown all the varieties of each section that could be obtained. As many as 1400 varieties have been thus included at one time. Many excellent varieties have been sent out by Mr. Davis which are established favourites with cultivators.

MR. PETER BLAIR (Trentham).—Trentham is one of England's celebrated gardens, and Mr. Blair has in the past few years satisfactorily proved his ability to maintain its fame. Orchids, Chrysanthemums, and fruit are the specialties, but it was a surprise to many last year to find Mr. Blair a successful competitor at Chrysanthemum shows both north and south. The collection of Chrysanthemums is probably the largest in any private garden in this country, as considerable quantities of cut flowers are required for decorative purposes.

MR. R. FALCONER JAMESON (Hull).—The popular Chairman of the Hull Society could fairly claim to have exerted a greater influence upon the extension of the Chrysanthemum interest than any other amateur in the north of England, and mainly by his efforts the Hull Society was started, and the generous policy he advocated has resulted in a most gratifying success. The annual Show there has now become one of the best in the kingdom, and attracts a large attendance of visitors, rivalling Portsmouth in numbers. Mr. Jameson has been ably supported by the Hon. Secretaries, Messrs. Harland and Dixon, the former especially as the Hull representative on the Committee of the National Society, and all worked together most harmoniously to ensure the success of the National Provincial Show at Hull last year.

MR. J. HUGHES (Birmingham).—As Secretary of the Birmingham and Midland Counties Chrysanthemum, Fruit, and Floral Society, Mr. Hughes occupies a prominent position in the midlands. He is not an exhibitor, but a laborious worker in the interests of horticulture. He is a model Secretary, patient, courteous, and possessing a mastery of details that renders his services invaluable. He appears to spend all his spare time in the furtherance of objects that are instituted for the improvement of gardening and the well-being of gardeners. The Birmingham Chrysanthemum shows now rank amongst the most important, and the November exhibitions in their entirety are not surpassed by any in the kingdom.

MR. C. GIBSON (Morden).—An able gardener, a persevering worker, an excellent Chrysanthemum grower, and an unassuming man is Mr. C. Gibson. He is regarded as one of the most modest winners and best losers in the south. He neither boasts when successful, nor grumbles when defeated, but is "always the same." When, through an accident in staging at one of the National Shows, he lost the first prize in an important class, his integrity was recognised and a special honorarium granted. There are not many men who cut more exhibition blooms from the same number of plants than does Mr. Gibson, nor win more prizes with them. He always stages well, and has secured valuable prizes in the best classes at leading shows. The chief events in Mr. Gibson's career can only be briefly summarised. He commenced his career as an exhibitor at the Borough of Hackney Society's Show in the Royal Aquarium, Westminster, in 1879, where he won three first prizes. This success has been well followed each year until his record now is over 100 prizes, a large proportion being firsts. His best year was in 1886, when he won the Kingston cup, £10 at the Crystal Palace for forty-eight Japanese and incurved, the same amount at the Aquarium for forty-eight Japanese, and would have won the corresponding prize for forty-eight incurved at the same Show but for the unfortunate accident of showing four Golden Queens when not more than three of one variety were admissible.

MR. HENRY CANNELL (Swanley).—The Home of Flowers is famed for its Pelargoniums, its Tuberous Begonias, and for many other popular flowers, but at this time of year the special feature is formed by the

Chrysanthemums. To these Mr. Cannell has devoted much attention for many years, and has achieved a large share of success, for not only has he aided in drawing public attention to them generally, but he has introduced many valuable varieties, some direct from Japan, and others as seedlings or sports raised on the Continent or in England. A long chapter could be written respecting the important service rendered by Mr. Cannell in the Chrysanthemum cause, but space will not permit in the present issue, and we shall have something more to add on "men of the time," among whom Mr. Cannell is entitled to a high position.

MR. CHARLES PEARSON (Nottingham).—Chilwell, near Nottingham, is admittedly the great Chrysanthemum emporium of the midlands, and has been raised to the position it occupies mainly through the instrumentality of Mr. Charles Pearson, who may be termed the floral member of the firm that has there been so long established. The Chilwell collection of Chrysanthemums is one of the largest in the kingdom, and the plants are displayed to the best advantage in the large and lofty structures in which they are arranged. Mr. Charles Pearson is a great admirer of the flowers, and secures the best new varieties for comparison with the old. He has a keen eye for noting the characters of the varieties, and their adaptabilities for exhibition and floral decoration, and the papers which he from time to time writes are always fresh, instructive, and interesting. Assuredly he has plenty to write about, as will be readily acknowledged by all who find their way to Chilwell about the middle of November. The Show there is visited by thousands of persons during the Chrysanthemum month, and is worth a long journey to see.

MR. ROBERT OWEN (Maidenhead).—Mr. Owen is widely known in the Chrysanthemum world, for he has been a cultivator for many years, and has introduced many varieties into commerce. Numerous seedlings have also been raised at the Floral Nursery, Maidenhead, some of which, especially in the late-flowering type, have proved very useful additions to the lists of decorative Chrysanthemums. Mr. Owen has for some years taken an active part in the affairs of the National Society, being a member of the General and Floral Committees.

MR. GEORGE STEVENS (Putney).—In the St. John's Nursery, Putney, Mr. Stevens devotes a large proportion of space under glass to Chrysanthemums in October and November, not only as a display, but to furnish supplies of blooms for cutting. For this purpose he grows all the most effective and free-flowering varieties, and in addition has a large general collection. Mr. Stevens has been fortunate in raising numerous distinct seedling Chrysanthemums from imported seed, and intends following this method up more closely. He has been connected with the National Chrysanthemum Society for some years, and is a regular attendant at all the meetings.

MR. J. LAMBERT (Shrewsbury).—The Shrewsbury horticultural shows have become famous, not only for their magnitude, but for the extraordinary number of visitors which attend them from the surrounding district. Mr. Lambert has been one of the many successful exhibitors at those shows, and has also proved himself a skilful grower of Chrysanthemums by the blooms he has staged and the prizes he has won in high class competition. He may be fairly regarded as a representative cultivator in the district in which he has done such good work as a gardener, and whenever he exhibits his opponents have learned that it is necessary to put forth their full strength for placing him lower than themselves in the prize list. He is a thorough gardener and strives to do whatever he undertakes well, including the growing and also the staging of Chrysanthemums, for his blooms are always displayed to great advantage in the stands.

MR. E. MOLYNEUX (Swanmore).—When we published Mr. Molyneux's portrait on a former occasion, we stated that as a young man he had never been employed in a garden where Chrysanthemums were grown, except in the ordinary decorative way; but seeing the splendid flowers produced by the Liverpool growers, and being impressed with their excellence, he was animated with a desire to equal them, and well he has succeeded, in winning such a large number of prizes in the best competition, including more large challenge cups than any other man. This should be very encouraging to other young growers who desire to emulate him. He is a close observer of all small details in connection with the growth of the Chrysanthemum, never over-estimating his own produce. He has also been serviceable to many by his excellent work on Chrysanthemum culture.

MR. JOHN LAING (Forest Hill).—One of the most genial horticulturists of the present time, a practical, shrewd, and thorough man of business, a skilful hybridiser and cultivator, and a devoted gardener in the broadest sense of the term. Mr. John Laing, the founder of the Forest Hill firm, well deserves his popularity and success. Mr. Laing was born in October, 1823, in the parish of Carriston, near Brechin. His first instruction in gardening was gained in the gardens of Old Montrose, under the charge of Mr. Reid, and it was there he directed his attention to the study of Mosses and other cryptogamic plants, of which he ultimately acquired a considerable knowledge. The next move was to the gardens of Kinnaird Castle, the seat of the Earl of Southesk, and during the two years spent in that establishment he applied himself closely to his gardening duties, but still found time to pursue his



MR. P. BLAIR
(Trentham).



MR. R. FALCONER JAMESON
(Hull).



MR. J. HUGHES
(Birmingham).



MR. C. GIBSON
(Morden Park).



MR. H. CANNELL
(Swanley).



MR. C. PEARSON
(Chilwell).



MR. R. OWEN
(Maldenhead).



MR. G. STEVENS
(Putney).



MR. J. LAMBERT
(Shrewsbury).

botanical studies. Removing to the Royal Botanic Gardens, Edinburgh, under Mr. McNab, he conducted himself with so much satisfaction to the authorities that he was honoured with an associateship. In 1847 Mr. Laing was appointed manager of the Onchan Nursery in the Isle of Man; thence he went to Chester, and took charge of the indoor department at Messrs. F. & A. Dickson's nursery. Remaining there for a short time he was engaged by the Earl of Rosslyn, as gardener at Dysart House, Fife, where he gained much fame as a cultivator. In 1860 Mr. Laing joined the firm of Downie & Laird, and proceeded to London to establish the nursery at Stanstead Park, Forest Hill. The firm was dissolved in 1875, as regards the London branch. Mr. Laing then took the business himself, subsequently admitted a partner, and until a year or two since, Messrs. Laing & Co. was the business title. A change was, however, effected recently, and the business is now confined to Mr. John Laing and his two sons, Mr. J. A. Laing and Mr. J. H. Laing. Mr. Laing dates his experience as a Chrysanthemum grower from 1849, and for some years he was a most successful competitor at Edinburgh. In late years he has obtained numerous valuable seedling Chrysanthemums.—(*Extract, with portrait, from Mr. Lewis Castle's "Chrysanthemum Annual."*)

MR. R. PARKER (Impney).—When Mr. Parker first came to the front as an exhibitor of Chrysanthemums and the winner of chief prizes in good competition his success created a feeling of wonder as to whether he would be able to maintain the position he so quickly won. He has done so, one of his latest achievements being the winning of the greatest prize ever offered for Chrysanthemums, and this in one of the closest and keenest of contests—namely, the forty-eight bloom class at Birmingham in 1889. The achievement is the more noteworthy since it was the fourth consecutive year in which he won the chief prize in the great midland city, and always against first-class competitors. Also in three consecutive years he won three cups at Sheffield, including the "National" for seventy-two blooms. That record of success alone entitles him to the distinction of being presented to our readers as "a man of the time;" therefore we reproduce his portrait which we had previously engraved.

CHRYSANTHEMUM BLOOMS DAMPING—CAUSE AND PREVENTION.

I HAVE pleasure in complying with the request from Leicester to contribute a "short paper on damping" for the purpose of eliciting discussion at a meeting of friends there—friends of myself and of the flower we think worthy of our solicitous care in cultivation and preservation.

As almost, if not every theory that has been advanced on the subject in question has been contradicted on some grounds, and it may be good grounds, as based on experience, I shall take a stand on what I think is a firm foundation, and challenge opposition to the following proposition—namely, that the cause of the evil—the premature decay of the blooms of Chrysanthemums known as damping—is either in the soil or the atmosphere, or both. A denial may be given to that proposition, but I shall be very much surprised if its falsity can be sustained. Though I know from evidence of the most convincing kind that the initial cause of hundreds of blooms decaying, even before their development, was in the soil, I suspect in the overwhelming majority of cases the origin of the evil has been above ground, not within it, while in not a few instances a combination of accidents or mistakes above ground and below has culminated in disaster.

I think it will be well to first get to the root—not of the question perhaps, but to the roots of the plants—in a search for the operating causes of the unwelcome visitation of mouldiness and decay that ruins so many blooms, and work upwards. In nine cases out of ten, when cause of the mischief is in the soil it is traceable, I believe, to the excessive application of ammoniacal manures. Several instances of damping arising from this practice has come under my notice, and one especially proved the case conclusively. An earnest young man, with the best intentions, was caught watering the plants in a large house with a solution of sulphate of ammonia. On ascertaining its strength it was found he was using the salt nearly at the rate of 2 ozs. to the gallon of water. He was told to stop forthwith, and not to give the remaining plants any stimulant whatever. The overfed plants were ruined, and the expanding flowers rotted on the stems, while those on the plants that were not "assisted" were as fresh and bright as blooms could be, all in the same house. On examining the roots of the former they resembled shag tobacco, and most of them were dead, while those of the latter were fresh and active. Obviously the crippled roots could not imbibe nutriment for the support of the plants, and drooping of the leaves with shrinking of the florets naturally occurred, followed by decay. But, it may be asked, why did they not shrivel without decaying? They might have done, perhaps, if the atmosphere of the house was as dry as a desert, but it was not, though it was not too damp to injure blooms that had due nourishment from active roots with moisture passing freely from healthy leaves in the important natural process of transpiration. In this case the sap was kept pure; in the other it of necessity became first stagnant, then putrescent, and the inevitable fungus, or mould, took possession. Clearly the damp in the house was not the initial, but only the secondary cause of the collapse, and the real origin of the evil was undoubtedly in the soil.

But someone may jump up and say, or say without jumping up, "That does not fit my case at all. My plants had no liquid manure, yet the blooms damped, and those were the worst that got the driest at the roots." With a considerable fluctuation of temperature and much

moisture in the atmosphere that is exactly what might be expected to occur. The florets of the plants which accidentally became too dry at the roots would shrink, though the shrinkage might not be visible, and these would, on that account, be the first to "go." As the strength of a chain is determined by its weakest link, so is the resisting power of Chrysanthemum blooms to adverse influences determined by the weakest florets, and I suspect no one will venture to say that those which shrink through any cause are then the strongest.

We are steadily working upwards, and I will now ask you to leave the earth for a few moments and follow me into the air. We may possibly all get up in a balloon together, but never mind so long as we come safely down again.

I am inclined to believe that where one Chrysanthemum bloom is ruined by damp through an accident to the roots of the plants, that ten are destroyed through atmospherical influences, such as extreme fluctuations of temperature and the condensation and precipitation of moisture on the flowers. It is not the moisture in the air in the form of vapour that causes damping, but that which changes to water by cold and falls on the blooms, or in other words the blooms will not "damp," so much in a moist plant stove in which a somewhat high, and especially an equable temperature, is maintained as they will in a greenhouse where the heat rises to above 70° by the sun in the daytime, and falls to, perhaps below, 40° at night. This is what sometimes occurs when the days are bright and the nights clear and frosty. The sun makes the blooms tender in the day, and when they become cold at night far more moisture condenses on them than if they were warmer. This is not a question of opinion but a matter of fact—the simple operation of a law of Nature, as evidenced in the formation of dew. Chrysanthemum blooms suffer under the conditions indicated; but, fortunately, if the injury cannot be prevented in all cases it can be minimised in many. A gauze-like blind or close net spread over the glass to break the sun's rays in the daytime will do something, but a thicker blind to prevent the radiation of heat at night will do more in preserving the blooms. This is because they do not become so cold, and it is a fact that the colder they become the damper they get, and the warmer they are the drier they remain, under similar hygrometrical conditions. It is not suggested that a higher temperature should be maintained than is good for the plants. That is not in the least necessary, but it is most desirable that an extreme range should, as far as possible, be prevented. I am positive that numbers of Chrysanthemum blooms have been spoiled by want of a reasonable amount of fire heat at night; and I will add in the daytime also when the temperature ranges abnormally low, as it does sometimes when there is a term of frost, rain, and sleet, a chilling wind and little sun.

It is under these conditions—a term of very cold days and nights, with now and then a sudden rise in temperature, or what is called a muggy or murky day, with more or less of mist or fog, that the blooms "go off" so rapidly. They have become cold—too cold—and the moisture in the warmer, and perhaps saturated atmosphere, condenses on them like a heavy fall of dew, and that is what it really is, and they in turn become saturated. Those the nearest the glass are the first to fail; those of the same variety and of the same age several feet below them being the last to suffer. At a critical period in the life of the blooms several may, under certain conditions, go off in a night, and those are the most likely to do so that have been generously fed with nitrogenous manures.

When are the falls of dew the heaviest? When the nights are the clearest and there is moisture in the atmosphere. That is because radiation is the greatest, cooling the surfaces of plants and blooms, and the moisture coming into contact with them is deposited—changed from vapour to the liquid form. When are dews absent? When the sky is overcast, the clouds not only preventing the radiation of heat from the earth and its vegetation, but often radiating it from the atmosphere instead. Dew then cannot form, because the surfaces of plants are not cold enough for the precipitation of moisture that is floating above them. When a screen or blind, instead of clouds, intercepts the passage of radiant heat from Chrysanthemums that are not too cold under glass there can be no deposition of moisture on them. What even a slight screen does in arresting radiation has been determined by experiment. A thermometer on grass exposed to the clear sky fell to 35°, another with a cambric handkerchief thrown over it ceased falling at 42°. An instrument against an exposed wall registered 38°; another near it, but with a piece of gauze stretched across 2 or 3 inches from it, registered 43° as a minimum. These facts are suggestive, and point unmistakeably to the desirability of maintaining, as nearly as is practicable, a moderate and equable temperature by the combined agency of fire heat (when needed), light screens on cloudless days, and thicker blinds on clear nights, when stars innumerable glitter in the firmament.

Oh, but that is all theory, some stern practicalist may say, who only believes in what he calls facts. If he will test the theory by practice, as I have tested it, he will have the facts; and he can do this in a very simple way. If he has a number of plants of any variety prone to "damp," that he wishes to retard, let some of the plants remain with their blooms not far from a glass roof on clear cold nights, after bright sunny days, when the temperature falls from, say, 70° or higher to 40° or lower, and others in a room, and see which keeps the best. He will find those in the room will, even if it is not a particularly dry one, because the temperature is much more uniform—cooler in the day, as little influenced by the sun, and warmer at night, inasmuch as there is little radiation. There may, and often is, a variation of temperature in one

case of 30° and not above 5° in the other ; but if the air is heavily, charged with moisture, no room or structure in which Chrysanthemum blooms are kept should get so cold and chilly as to give one a shudder,

Thus, as Professor Johnston has said, "in the cool of a summer's evening the grass plot is wet, while the gravel walk is dry, and the thirsty pasture and every green leaf are drinking in the descending



FIG. 49.—KINGSTON CHRYSANTHEMUM SHOW (See page 387).

but fire heat must be employed for preventing the condensation of moisture on the plants and blooms. The surfaces of these are colder than the stages are on which the pots stand, or of exposed soil.

moisture, while the naked land and the barren highway are still unconscious of its fall." No person who is the least observant can deny that, and if Chrysanthemum blooms get too cold, or much colder than

the surrounding damp air, they "drink in" the moisture that is deposited on them, and as what they cannot appropriate cannot quickly escape by evaporation they become saturated, hence decay; and the colder the house the less the evaporation, and the more quick and complete is the work of destruction.

I now pass to another cause of Chrysanthemum blooms damping. It reminds somewhat of the butcher who was searching long and anxiously for his knife, and found it in his mouth. Most persons have probably sought for something at some time or other that was all the time very near. Not many men have studied Chrysanthemums more closely than has Mr. Pithers, the grower of one of the largest collections in the kingdom—Messrs. Pearson's of Chilwell. He is convinced that many blooms decay because the plants are left outdoors till the buds open and the blooms are partially expanded, as in showery weather the water must pass down between the florets and lodge in the capitulum, from which it cannot escape by evaporation, and especially in houses in which little or no fire heat is employed. That appears to be a common sense view of the matter. We all know that if Mustard and Cress is grown thickly, and freely sprinkled with water in a cold house at this season of the year, that it "damps off." This is because the excess moisture cannot escape by evaporation through the thicket of leaves. Damping is then bound to follow, and I think the suggestion of Chrysanthemum blooms damping by the same cause is worthy of consideration.

That view of the case, and probably others previously advanced, will be very likely opposed, on the ground that the blooms on plants grown in the open air, and therefore exposed to rain and extreme fluctuations of temperature, do not, as a rule, decay to anything like the extent that those do under glass. This is a fair practical argument to advance, and should be fairly met. I can only, in the few moments remaining to me for completing this paper, suggest in what way to meet it.

In the first place the plants grown in beds or borders are not highly fed with nitrogenous manure, and the florets are shorter, stouter, and hardier in consequence. In the next place the florets do not press on each other so closely and firmly, either in incurving or reflexing, as in the case of more highly developed blooms under glass, consequently air can pass between them the better; and, lastly, though the rain may pass into the open blooms readily it passes out of them the more freely when shaken by a brisk dry wind, and the evaporation of moisture from them is then more rapid than it can possibly be from closer blooms that remain stationary under glass.

Undue feeding for the production of large blooms, and consequently tender florets, with great variations of temperature, or allowing them to get too cold, so that on a natural and sudden return to dull damp weather moisture is condensed on them, are, I submit, the chief causes of the calamity that befalls so many blooms and brings dire disappointment to their cultivators.

I have seen water standing on the floor of a sunken house for weeks, and the stages filled with Chrysanthemums in flower, yet by maintaining an equable temperature with the aid of fire heat and blinds there was no damping of the blooms. They were not, however, fed up with ammoniacal manures for exhibition, but the plants were grown in a natural way for home decoration. The night temperature was not allowed to fall below 45°. If it had sunk below 40° and remained so for any considerable time the blooms would have "damped," as they did in previous years when fire heat was reduced to a minimum and screens and blinds were not brought into requisition.

I should like to say more on the subject with which I have been requested to deal, but all I can say at present is this: It is my wish that the whole matter be well considered; that everything I have advanced be opposed freely by friends who can point out the weakness of the propositions and adduce others more sound, for I shall be very willing to be proved wrong if by more sure and certain methods the blooms which have been worked for so long, and looked for so anxiously, can be preserved in all their freshness and beauty over the full term of their natural life, instead of being devoured, as it were, in their infancy by the dreaded ogre of Chrysanthemum growers—the "damp fiend."—J. WRIGHT, *Fleet Street*.

DRESSING AND STAGING CHRYSANTHEMUMS.

THIS paper is unfortunately written somewhat hurriedly on account of the small space of time allowed, consequently I feel that I shall not be able to say (and what I do say will be said imperfectly I fear) all that I would wish. My subjects, for they cannot be considered as one subject, are such as are properly open to various opinions and forms of practice, and therefore are very suitable for debate.

Dressing is necessarily the first to be considered, for the flowers must be made as perfect as possible before they are staged. Considerable variance of opinion exists in regard to dressing Chrysanthemums and other flowers when about to be exhibited in competition for prizes, and so long as judges make their awards according to the canons of perfection now and long in vogue, so long will it be necessary for competitors to render what manipulatory aid they can to bring their flowers as near as possible to the standard required.

Whether it would be better to exhibit flowers as grown need not here be discussed, but perhaps I might be allowed to say that, in my opinion, were the law to go forth that in future no flowers for competition shall be dressed, such law would be futile. By the term dressing many people imagine that some occult and secret process is implied, and that reflexed

blooms can be transformed into incurved by the aid of curling irons; also that a poor and badly grown bloom can be made as fine as one that could properly be called a good bloom. This is not the truth in the abstract and under such conditions; but given two blooms of equal quality and of the same variety—one flower to be dressed and the other not—the one that has been dressed is nearly always admitted to look much better, even by persons who are prejudiced against dressing. That a bad bloom can be greatly improved by dressing must be admitted, also that a really good bloom may be slightly improved, but as a rule the better and more perfect the bloom is the less there is to do in dressing.

I do not attempt to deny that the best blooms are occasionally placed second or third to those not quite so good, but which had been well dressed; but such cases are very rare, and during a period of ten years I have only once been a participator in such awards, and then an unwilling one, being one against two in making the awards. It is very hard on a man who has grown and exhibited the best blooms in an exhibition to place him second or third simply because he had not touched his flowers in the way of dressing; but, after all, is it harder than withholding the first prize from a man who exhibits a splendid horse or ox in dirty and untrimmed condition, or a bunch of Grapes containing seedless berries, or which has never been thinned?

Assuming, then, that dressing improves the appearance of Chrysanthemum flowers, and that therefore it is desirable, the question arises, How is a grower to proceed? He must first obtain a pair or two of tweezers that are made for the purpose of extracting deformed, short, or superfluous florets. Possessing these, it is as well to commence dressing, as the flower expands by extracting the florets just mentioned as they appear. This allows the bloom to develop symmetrically, whereas when such are left in until the last it not only takes a considerably longer time to dress the blooms, but sometimes the florets that have been pushed out of place by such deformed florets do not readily fall into their proper places, hence arises a tendency to roughness of appearance. Any staminate florets (yellow florets) that are seen at the base of the florets or in the centre should also be removed, and when the bloom is fully expanded, if it is a perfect bloom, there will be a number of short florets in the centre, and these must be removed by the aid of the tweezers, when the longer florets will fall into the centre and present a perfect bloom. A little courage is required to remove these short florets; they should be plucked out boldly and with a firm hand. When the blooms are cut preparatory to staging, they should be again examined for the purpose of removing any overlooked deformed floret, and then be cupped. After being pulled up so that the florets close well over the centre, they should be securely pegged. Then, commencing at the centre of the bloom, with the small end of the tweezers proceed to arrange the florets in an imbricated manner smoothly and regularly, and radiating from the centre. In a good bloom there are numbers of florets having one or two underneath them; these should be carefully released, and placed in their respective places. Any floret that reflexes may be had into proper form again by stroking the inside with the smooth and rounded end of the tweezers; but some are very obstinate, and in such cases there is no alternative but to pull them out. To dress a large and good bloom well takes from twenty to forty minutes, therefore such work requires patience and a steady hand.

Having dressed the blooms the next subject is staging them, or more properly, arranging them in their stands; and here there is abundant scope for the exercise of the faculties of form, colour, proportion, and ingenuity. In the first place the stands when filled should appear as evenly balanced as possible, and likewise each row. Dumpiness and lop-sidedness must be avoided. Let the weight of the flowers be evenly distributed from end to end and back to front of the boards. The back row should be higher than the middle row, and the middle row higher than the front row, so that the whole of the flowers may, as far as possible and consistent with general effect, be seen to advantage. Sometimes it is necessary to have a flat flower in the same row as deeper ones; in such a case it should be specially raised to the level of the others in the same row, and this rule applies in all cases—viz., that all the flowers in the same row should be raised to the same level.

These are all aids to general effect; but I may here observe that competent judges are never deceived by any of these extraneous aids, but they are relieved of the trouble of raising flowers or taking them out of the stands for the purpose of seeing them properly; consequently good staging greatly facilitates the work of the judges, and all other conditions being equal, the best staged blooms would look the best, and therefore would rightly receive the first prize.

A proper arrangement of colours is also very important; harmony and contrast always to be borne in mind. Some people follow their own taste—or rather, the want of it—in opposition to all the rules of colour. Generally speaking, colours complementary to each other are the most easy of arrangement amongst distinct varieties of cut blooms of Chrysanthemums, and white agrees with any colour. In such an arrangement shades of the same colour should be separated, because they give either too light or too heavy appearance of that part of the stand. But I think horticultural societies have room for advancement in this particular. The stereotyped "Groups for effect" are about played out, and it is time something was done to advance a knowledge of the art of arrangement of colours. As a fact, very little advance has been made in that way.—JAMES UDALE, *Haverland Hall Gardens, Norwich*.

IN reference to dressing blooms, there is not so much art as supposed. The principal points are to grow the florets to the greatest possible

length, removing any irregular ones as the bloom develops, and when it is observed that the bloom is nearly finished, the centre should be taken out, and all the short florets. This will cause the longer plants to close inwards. On the other hand, if the centre was left in, they would grow outwards. Beginners at dressing often fail to take sufficient out of the centre before arranging the florets.

As to the damping, I have already told all I know on the subject. I may repeat, I do not think this is caused from the roots. It is, in my opinion, caused by the moisture that is carried in the atmosphere; this condenses on the florets. The least blink of sunshine, and the evil is apparent. Try tiffany as a permanent shade inside over the opening blooms, with a heavier shade outside on cold nights, also during sunshine. Keep the house closed during foggy weather, and ventilate freely, with sufficient heat in the pipes to keep the air of the house in motion. There will then be less complaints about damping. I had thought to have had a good struggle this year with damping. I do not show now, therefore I scarcely like to shut the light from my Peaches. —W. TUNNINGTON, *The Gardens, Calderstone.*

LARGE CHRYSANTHEMUM BLOOMS.

SOME writers have declaimed against the size attained by the new varieties of Chrysanthemums. Where size has been obtained with the addition of coarseness they possess little attraction, and it would be unwise to place them in stands intended for competition if it can be avoided. The defective blooms may be quilled in their florets, others may be bad in colour, or they may have badly developed centres, points which tell heavily against them. On the other hand, where large blooms possess size with substance in the florets, well finished centres, and good colour they will undoubtedly tell better on the exhibition stands than smaller ones. Growers all value the smaller varieties for their several good points—it may be form, or colour, or beauty of florets, and in collections where the chief object is not competition more of these smaller varieties are grown with the large ones for variety, and there are few exhibitors I imagine but have favourites, which they grow for their own merits, and which are known to be useless for exhibition purposes.

The extraordinary popularity of the Chrysanthemum at the present time is due in a very great measure to the size attained by the blooms as grown by the method of culture now adopted, and also to the interest afforded by the new varieties.

It is apparent to all attending exhibitions which have the most attraction, for although groups and trained plants are much admired and add greatly to the exhibitions, as well as show the skill of the growers, the large cut blooms draw crowds of visitors round them, and it is the same at home displays. Several hundreds annually visit these gardens at this season, and whether they are old growers or persons new to the present state of Chrysanthemum culture, the largest blooms invariably receive the most praise. The public expect to see at exhibitions the very best productions, whether Chrysanthemums or other plants or flowers, arranged in their best form. But while I consider size to be preferred, other qualities being equal in the incurved and Japanese varieties, I think in the Anemone and Anemone Pompon only those varieties should be shown which tend to make the stand uniform, and as an illustration I may say that President when overgrown is quite out of character in a Pompon board. Much more could be written on this subject, but I must close my letter for the rapidly approaching Chrysanthemum season leaves little time for writing. —C. GIBSON, *Morden Park Gardens, Mitcham.*

LARGE blooms have been strongly condemned together with our whole system of cultivation by which such are produced. Some are evidently dissatisfied with the present state of things, and would have us return to the days when a few small Pompons and weedy straggling so-called bush plants of larger flowering varieties carrying thin weakly flowers but little larger than the Pompon varieties were met with in most good gardens.

Fortunately for the Chrysanthemum and its future popularity we have good grounds for knowing that the dissatisfied men constitute a small minority, whilst each succeeding year Chrysanthemum shows are growing in numbers, in popularity and attractiveness. How few now are the gardens where no disbudding is practised, and no attempt made to produce these large flowers compared with what was the case a few years ago. Where exhibiting is not allowed or thought of they still must be produced, as gentlemen possessing the necessary glass accommodation and employing gardeners are no longer content to be behind their neighbours in this respect.

In the dreary month of November what can be so enlivening as a fine display of these large well-grown and brightly coloured flowers? The introductions of the last year or two have certainly had a tendency to increase in size, especially so the seedlings from

America; but fortunately along with this enlargement has come a decided improvement in the habit of growth and foliage. I have only to mention such grand new varieties as Etoile de Lyon, Avalanche, Condor, George Daniels, Sunflower, &c., as proof of my statement. We have now no varieties introduced of the type of Madame C. Audiguier, which will oftentimes attain a height of 14 feet; and I am aware that this, with other such tall growing varieties, are gradually disappearing from collections to give place to others with dwarf habit, fine foliage, and large brightly coloured flowers. So long as this improved habit and foliage of the plant is accompanied by increased size in the blooms the raisers of new varieties need have no fear that their work will cease to be appreciated or that a ready market will not be found for their introductions.—W. K. W.

THE KINGSTON CHRYSANTHEMUM SHOW.

As an example of the method of arrangement adopted at one of the most popular and successful autumn shows, we gave in 1886 an illustra-



FIG. 50.—MR. EDWIN MOLYNEUX. (See page 382.)

tion of the Volunteer Drill Hall at Kingston-on-Thames, where the annual Exhibition of Chrysanthemums is held, which is here reproduced. It is impossible in shows of this kind to avoid some formality in the disposition of the exhibits; every effort is made to relieve this as much as possible, and the result in this case is more than ordinarily satisfactory. Next to the walls of the building were placed the groups of miscellaneous plants and Chrysanthemums together, with specimens of the latter in several classes. The principal of these were, however, arranged at the end of the hall at the base of a small stage, as shown in the centre of our illustration, and in that position they had a most telling appearance. The most important among them were the very handsome plants from Mr. G. King, gardener to Mrs. Few, Esher, his half dozen specimens each 4 or 5 feet in diameter, and bearing hundreds of blooms, being worthily awarded the premier prize.

The centre of the hall was devoted to the cut blooms, three tables extending nearly the whole length of the building, and upon a third one, across near the entrance, were arranged the collections of fruit—Apples and Pears. In the centres of the tables, between the rows of cut bloom boxes, were lines of table plants, "berried" plants, Primulas, &c., the

first-named being especially useful for relieving the rather flat appearance of this part of the Show.

CERTIFICATED CHRYSANTHEMUMS, 1859-1890.

THE award of certificates to novelties of approved merit has now become a business of serious importance, and the circumstances are quite altered from what prevailed twenty years ago. Enormous numbers of seedlings are raised every year on the Continent, and too frequently, without adequate trial, are named and sent to this country for sale, leaving much the more important work of testing their distinctness and quality to our own nurserymen or private cultivators. The public have had some experience in recent years in this matter, and now require some kind of official recommendation before they invest in novelties they have not had the opportunity of seeing themselves. The Floral Committee of the Royal Horticultural Society and of the National Chrysanthemum Society have in consequence a grave responsibility, and how much may turn upon a verdict of this character was seen in a recent law case which attracted a large share of attention. The members of these Committees seem fully alive to their responsibility, and much greater care is now exercised in the awards than was the case a few years back. There was some excuse for the greater liberality in granting such honours when the novelties were much less numerous than at the present time, and it was desirable to encourage the production of worthy additions to the list. The result is that Chrysanthemums certificated within the past thirty years possess very different value, and may in consequence be taken as indicating somewhat of the historical progress accomplished. A descriptive catalogue of the varieties would, therefore, include the best of these in commerce at the different periods, and as this must possess some interest I have completed a list commenced several years ago, which will be published in this Journal from time to time.

The list will include all the varieties certificated by the Royal Horticultural Society and the National Chrysanthemum Society, with the principal of those honoured by judges at the leading provincial shows from 1859 to the present year. It will also give the date when the variety was certificated, the name of the exhibitor and raiser where obtainable, the chief characters of the flower and plant, and its general history.—L. CASTLE.

(To be continued.)

CHRYSANTHEMUM SOCIETIES AND SHOWS.

THE following list has been prepared at the request of numerous correspondents, who have supplied us with the particulars here given, and it will, no doubt, be found useful by many who are concerned with exhibitions during November. The name of the society, date of show, with the Secretary's name and address are given in that order.

Ascot, Sunninghill, Sunningdale, and District, Nov. 6th and 7th; F. T. Patton, The Links, Ascot
 Banbury, 19th Nov.; H. F. Bennett, 46, High Street, Banbury
 Bath, November 12th and 13th; B. Pearson, 14, Neilson Street
 Batley and District, Nov. 22nd; John T. Booth, Batley
 Bedford, Nov. 19th and 20th; J. Sanders Clarke, 49, Linden Road
 Birmingham and Midland Counties, Nov. 12th and 13th; J. Hughes, Northwood Villas, Metchley Lane, Harborne, Birmingham
 Bournemouth, Nov. 12th and 13th; Charles Brown Carnarvon, Cavendish Road
 Bradford and District, Nov. 7th and 8th; George Taylor, 102, Godwin Street, Bradford
 Brighton, Nov. 11th and 12th; Mark Longhurst, 18, Church Road, Hove
 Brixton, Nov. 4th and 5th; W. Salter, Brixton Hill
 Cardiff and District, Nov. 18th and 19th; C. R. Waldron, 96, St. Mary Street, Cardiff
 Chelmsford, Nov. 12th and 13th; P. Edwards, 100 High Street
 Cheshunt, Nov. 14th and 15th; R. Archer, Hatton Road
 Chorley, Nov. 21st and 22nd; James Sargeant, 64, Market Street, Chorley
 Cornwall Royal Polytechnic, Nov. 12th, 13th and 14th; John P. Cregoe, 7, Tehidy Terrace, Falmouth
 Crediton, Nov. 13th; G. Lock, Belle Parade Cottage, Crediton
 Croydon, Nov. 12th and 13th; W. Beckett, 272, Portland Road
 Crystal Palace, Nov. 7th and 8th; W. G. Head
 Dawlish, Nov. 13th; H. L. Friend, 3, Priory Terrace, Dawlish
 Derby, Nov. 14th and 15th; G. Sutherland, Arboretum Square
 Devon and Exeter, Nov. 7th; G. D. Cann, 16, Queen Street, Exeter
 Diss (Norfolk), Nov. 18th; Rev. F. Page Roberts, Scole Rectory
 Ealing, Nov. 5th; J. A. Dawes and Geo. Cannon, 9, Drayton Green Road, Ealing
 Eastbourne, Nov. 11th and 12th; C. H. Simmons, Endlewick, Eastbourne
 Eccles, Patricroft, and Pendleton, Nov. 14th and 15th; H. Huher, 183, Worsley Road, Winton, Patricroft
 Exmouth, Nov. 11th; W. J. Godfrey, Rolle Street, Exmouth.
 Finchley, Nov. 4th and 5th; Edward Linfield, 19, Vernon Terrace, East Finchley, N
 Green Street and District, Nov. 19th and 20th; W. G. Ray, Mount Pleasant Nursery, Green Street, near Sittingbourne.

Hampstead, Nov. 12th and 13th; Robert Frishy, 47, Flask Walk, Hampstead, N.W.
 Hartlepool, Nov. 18th and 19th; B. C. Laycock, 147, Studley Road, West Hartlepool
 Havant, Oct. 31st and Nov. 1st; A Chignell, West Street, Havant, Hants
 Hayes, Nov. 7th and 8th; W. Henry Burr, Dr. Triplett's Schools, Hayes, Middlesex
 Highgate, Hornsey, and Finchley, Nov. 5th and 6th; Thomas Press, 11, Victoria Cottages, Archway Road, Highgate, N.
 Hitchin, Nov. 14th and 18th; Pearson T. Harris
 Hull and East Riding, Nov. 19th and 20th; Edward Harland and James Dixon, Manor Street, Hull and 2, County Buildings, Hull.
 Ipswich, Nov. 4th and 5th; Rev. H. Berners, Harkstead Rectory
 Isle of Sheppey, Nov. 6th and 7th; James W. Fuller, 3, Alexandra Road, Marine Town, Sheerness
 Kingston-on-Thames, Nov. 11th and 12th; G. Woodgate, Warren House Gardens
 Leicester and Midland, Nov. 14th and 15th; H. F. Anthony and E. E. Waite, Knighton Church Road, South Knighton, and 12, Diseworth Street, Melbourne Road, Leicester
 Lewes and District, Nov. 11th and 12th; Geo. Stroud, 20, High Street, Southover, Lewes
 Lindfield, Nov. 5th and 6th; Clive Wheeler, High Street, Lindfield, Sussex
 National Society.—Great Festival, Nov. 11th, 12th, 13th, and 14th; R. Dean, Frampton Park Nurseries, Hackney
 Norfolk and Norwich, Nov. 20th and 21st; John E. T. Pollard, 7, Lady's Lane, Norwich
 Northamptonshire, Nov. 12th and 13th; E. Draper, 2, Primrose Hill, Northampton
 Pembrokeshire, Nov. 6th; R. H. Treweeks, Main street, Pembroke
 Portsmouth, Nov. 5th, 6th, and 7th; F. Power, 36, Queen Street, Portsea
 Putney, Wandsworth, and District, Nov. 6th and 7th; John Moore, Upper Richmond Road, Putney
 Ramsbottom, Nov. 15th; H. H. Nutter, 14, Crow Lane, Ramsbottom, near Manchester
 Rugby, Nov. 19th and 20th; William Bryant.
 Scarborough, Dec. 2nd and 3rd; Thomas Henry Pexton, 136, North Marine Road, Scarborough
 Scottish Horticultural, Nov. 20th, 21st, and 22nd; R. B. Ferguson, 6, South St. Andrew Street, Edinburgh
 Southend-on-Sea, Nov. 13th and 14th; John Brown, Recko House Hamlet, Southend-on-Sea, Essex
 Swansea, Nov. 19th and 20th; Messrs. T. Kneath and W. Roberts.
 St. Neots (Hants), Nov. 10th; William Ratchelous
 Stroud, Nov. 6th and 7th; E. C. Davis, 10, Rowcroft, Stroud, Glos.
 Surrey, Nov. 3rd and 4th; James Springett, 40, Maxted Road Beckenham.
 Teddington, Nov. 13th and 14th; David Anderson, The Nursery.
 Tiverton, Nov. 20th; R. P. Cosway, Lime Cottage, Tiverton
 Tooting, Nov. 5th and 6th; H. Brown, 39, Defoe Road.
 Truro, Nov. 11th and 12th; Alfred Blenkinsop, 11, Princes Street, Truro
 Tunbridge Wells, Mid-Kent, and East Sussex, Nov. 12th and 13th; Ernest Charlton, 37, Ye Pantiles, Tunbridge Wells.
 Twickenham, Nov. 18th and 19th; J. J. G. Pugh, 2, Heath Road.
 Walkley, Nov. 7th; M. Taylor, 9, Spring Hill, Sheffield
 Wellington (Somerset), Nov. 14th; Charles Tite, Shutes House, Wellington, Somerset
 Wells (Somerset), Nov. 5th and 6th; Albion George Andrews, St. Cuthbert's Lodge, Wells, Somerset
 Westerham, Nov. 19th and 20th; Frank George Remnant, High Street.
 Wimbledon and District, Nov. 13th and 14th; Dr. Geo. Walker, 12, Lingfield Road, and W. W. Thomson, The Nurseries, Hill Road, Wimbledon
 Winchester, Nov. 13th and 14th; Chaloner Shenton, 74, High Street, Winchester
 York, Nov. 19th, 20th, and 21st; J. Lazenby, 8, Spurriergate.

OUTDOOR CHRYSANTHEMUMS.

I SHOULD not like to let your Centenary number pass without saying a word for one of my favourite methods of growing the Chrysanthemum, though I am rather busy building and fruit tree planting in a new town garden. I am rather surprised your correspondent, Mr. W. Piercy, should consider "the season has been a had one for the growth and perfection of the early flowering Chrysanthemums" in his interesting notes thereon last week. Early flowering and outdoor Chrysanthemums may generally be taken as synonymous, as in any part of the British Isles there is no occasion to house plants before October. In the south of Ireland there is rarely frost to do them any harm before November. Here, up to the present, the best days of October, there has not been a degree of frost yet; and my Pelargoniums, Dahlias, Vegetable Marrows, and other tender things are still untouched, luxuriating in the finest September and October within my recollection. The result is that my outdoor plants, at the base of a south wall and trained against it, as well as another lot on a western in another garden, are bursting rapidly into bloom, and the buds are among the fullest and most promising I can remember at a corresponding date. Passing over the usual

October bloomers, such as Madame Desgranges and its sports, G. Wermig and Mrs. Burrel, Alexander Dufour, Isidore Feral, M. Pynaert Van Geert, Simon Delaux, Sœur Mélanie, the very free and useful Elsie, and many others, I am cutting already others, such as Elaine—never finer, Lady Selborne, William Holmes, Sœur Dorothee Souille, Emperor of China, the hardiest Chrysanthemum in existence; L'Or du Rhin, James Carter, Amy Furze, M. Lacroix, and that splendid acquisition for any purpose, Avalanche. I should have named also M. Freeman, James Salter, and Bertie Rendatler, without including Pompons, which anyone can make a selection from, but I give a preference to fine varieties like those named. I must not be understood as confining my admiration to those early bloomers. I have 150 varieties, without including those in pots, in my greenhouse, and some varieties, like Goldfinder, Ceres, Ethel, and W. G. Drover bloom as late as January; but then I have crected over them a canvas-covered framework on hinges, that is raised by day and dropped down at night, which fairly answers its purpose, and gives me cut flowers for myself for wreaths, for church decoration, and for my neighbours, over Christmas.—W. J. MURPHY, *Clonmel*.

TAKING CHRYSANTHEMUM BUDS.

I MAY be rather late in expressing my views on this subject, but I have been led to pen these few remarks, as I find that growers still look for guidance. The "mystery" of bud taking, for such it is, as explained by some is very intricate. We are supposed to take a variety by a certain date to produce good blooms, and if this is not done it is hopeless to expect success. This is very perplexing to small growers, as they are at a loss what to do. For instance, many this season let the crown bud go as a supposed "freak," with the result that the next is a terminal; the blooms then, besides being late, are small and of little use for the exhibition board. The crown buds this season have generally shown early, and in our case these commenced in the last day or two of July, and by the first week in August numbers were showing. Acting upon the results of other seasons we took the crown buds as they appeared, and in a few cases allowed the shoot to run on to the next bud. The result is that the blooms from the crown buds are very good indeed, and likely to be in the second week in November, whereas the others are much smaller.

During the last week in July that superb variety Boule d'Or was showing; these were all taken, the result being that the blooms are likely to be very good indeed in every instance. About the time these were taken I read from the notes published at the time by one of our large growers, that the date would be too early for good results. I felt that we had made a mistake, but subsequent results reveal the fact that we were right. With many other varieties the results are the same. We are not exhibitors, but aim to have a good home show. From experiments with early varieties, rather too early for some exhibitors, I find that by topping the plants about March, and then running up a single stem, that the natural break is thrown much later. If buds are to be kept back, the plants must be manipulated upon during the early stages of their existence, either by later propagation than is usually practised, or by topping. In no other instance can the crown buds be made to show at certain dates or thereabouts. Small growers are in a maze with these published dates. When their buds show, if they are not about the time, they allow them to go by, the result being small blooms and late. It was only the other day that I saw a splendid lot of plants which had been allowed to run past the crown, and now the grower is bewailing his loss, as he can now see by what few crown buds that were taken the excellent results he would have had if all had been served the same.—A. YOUNG.

ROYAL HORTICULTURAL SOCIETY.

OCTOBER 28TH.

THE Committee meeting in the Drill Hall on Tuesday last was not very well attended, owing probably to the keen weather. Chrysanthemums constituted the chief attraction amongst the exhibits, and in the afternoon Dr. M. T. Masters delivered an excellent lecture on "Trees and Shrubs for Towns," in which he reviewed in an able manner the principal points connected with this wide and important subject.

FRUIT COMMITTEE.—Present: Sir C. W. Strickland, Bart., in the chair, and Messrs. J. Lee, T. F. Rivers, P. Crowley, J. Cheal, J. McIndoe, T. F. Saltmarsh, G. W. Cummins, G. Wythes, J. Hudson, W. Warren, and Dr. Robert Hogg. From the Society's Gardens, Chiswick, came collections of Potatoes and Endives that have been tested there. Mr. William Smythe, Basing Park Gardens, Hants, sent a seedling black Grape with round black berries, which, it was stated, kept well until

March; it was, however, passed by the Committee. Mr. T. Laxton showed a white-skinned Jerusalem Artichoke, which is to be tried when cooked, and samples of the Chou de Bedford, which was thought to be no advance on Couve Tronchuda. Mr. R. Dean, Ealing, sent fruits of Grange's Winter Pearmain Apple and Nouveau Poiteau Pear, for which cultural commendations were awarded. Mr. Colbourn, Woolhampton, exhibited handsome fruits from a second crop of Strawberry Noble (vote of thanks). Mr. Hunt, Ashtcad Park Gardens, exhibited samples of a medium-sized Apple, named Ashtcad Park Seedling, but no award was made. Mr. Wythes, Sion House Gardens, Brentford, sent even specimens of Cheltenham Green Top Beet (vote of thanks), and from Messrs. Carter & Co., High Holborn, came an excellent sample of Extra Early Autumn Giant Cauliflower (vote of thanks).

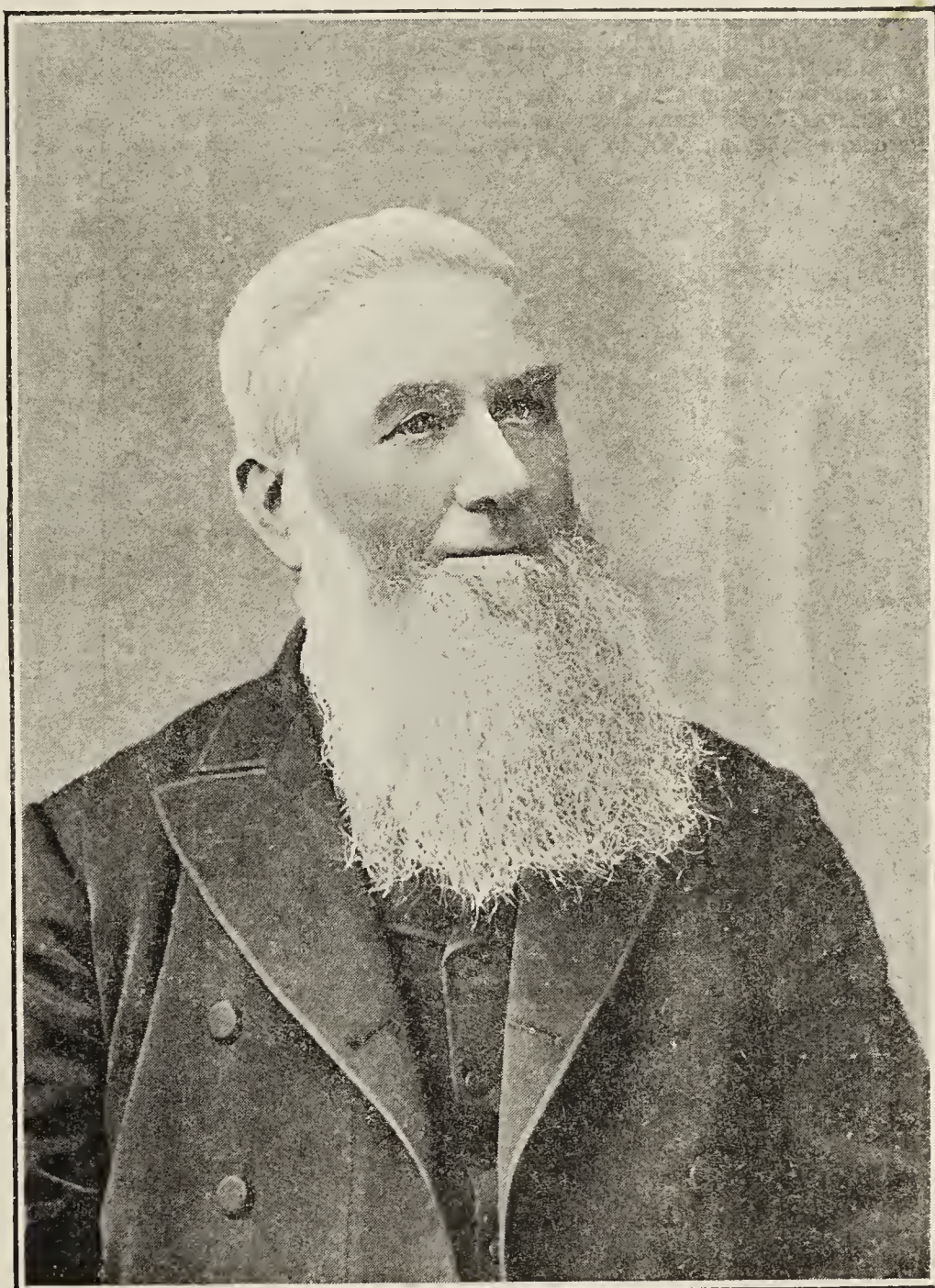


FIG. 51.—MR. JOHN LAING (Sec page 382).

FLORAL COMMITTEE.—Present: W. Marshall, Esq., in the chair, and Messrs. Herbst, R. Dean, B. Wynne, G. Nicholson, Lewis Castle, H. B. May, T. Baines, C. Jefferies, H. Turner, H. Cannell, C. Noble, J. Fraser, G. Paul, and the Rev. H. H. D'Ombrian.

From Messrs. J. Cutbush & Sons, Highgate, came a beautiful collection of Pernettyas, the plants compact and loaded with berries, the varieties rosea, atro-purpurea, rosea macrocarpa, alba, and purpurea being the most noticeable (silver medal.) Mr. R. Dean, Ealing, sent some good varieties of Pentstemons of bright colours, and an award of merit was granted for the strain. Messrs. H. Cannell & Sons, Swanley, contributed a large and handsome collection of Chrysanthemums, several of which were distinguished by awards of merit. Mr. Bridger, Penshurst Place Gardens, Tunbridge, showed plants of a border Carnation named Saccharina, flaked with rose on a yellow ground, and very free. Mr. G. Wythes had a stand of Chrysanthemum blooms very tastefully arranged with Fern fronds, small Palms, &c., for which a bronze medal was granted. Mr. R. Owen, Maidenhead, sent several new Chrysanthemums, and two obtained awards of merit.

It is not often that flowers of the Jerusalem Artichoke, Helianthus tuberosus, are seen in gardens or at shows, but Mr. A. Harding, Orton Hall Gardens, sent some small yellow flowers of the ordinary composite

character, but possessing no beauty. An interesting contribution came from the Royal Gardens, Kew, comprising flowers of the trumpet like *Solandra grandiflora*, the rosy *Ipomœa Briggsi*, the peculiar mauve coloured *Cleome heptaphylla*, the bluish *Solanum Seaforthianum*, and *Philodendrons Simsi* and *dolosum*. Mr. T. H. Crasp, gardener to Lord Wimborne, Canford Manor, exhibited an imposing stand of incurved and Japanese *Chrysanthemum* blooms, arranged on a steep high stage (silver medal). Mr. W. Taylor, Isleworth, had a small leaved, silvery edged *Cyclamen*, and a number of the ordinary type with large abundant flowers (silver medal). Messrs. Paul & Son, Cheshunt, showed specimens of hardy trees and shrubs, amongst which *Berberis Thunbergi*, with bright red leaves, was very conspicuous. Messrs. J. Laing & Sons, Forest Hill, had a small group of *Chrysanthemums*, including several new varieties, for which awards of merit have been granted.

ORCHID COMMITTEE.—Present: Dr. M. T. Masters in the chair; and Messrs. J. O'Brien, C. Pilcher, J. Dominy, De B. Crawshay, H. M. Pollett, A. H. Smee, S. Courtauld, and J. Douglas.

Conspicuous amongst the Orchids shown were the plants and varieties of *Cattleya Warocqueana* from M. Linden, Brussels, the varied forms and colours proving this to be a useful and beautiful *Cattleya*. A



FIG. 52.—MR. R. PARKER. (See page 334.)

variety of *C. granulosa* named *Russelliana* was also shown, together with *C. Lindeni*, for which an award of merit was adjudged. Other plants and varieties of *C. Warocqueana* came from R. Young, Esq., Liverpool; W. J. Thomas, St. Helens; A. C. Coombes, Dudley; and W. C. Atkinson, Aigburth. Mr. R. Young also sent three racemes of *Vanda Sanderiana* with from seven to twelve flowers each produced by one plant. The flowers were dark in colour and of good size. Messrs. Seeger & Tropp, East Dulwich, showed flowers of *Lælia Perrini* in several varieties.

CERTIFICATED PLANTS.

Berberis Thunbergi (Paul & Son).—An effective shrub, the leaves of which turn to a brilliant red colour before falling.

Chrysanthemum Duchess of Westminster (R. Owen).—A Japanese Anemone with a dense centre of rosy bronze tubular florets, and rather thin guard florets, blush, or nearly white.

Chrysanthemum Miss Anna Hartzhorn (R. Owen).—A fine white Japanese, already noted.

Chrysanthemum Eugénie Gait (H. Cannell & Sons).—A Japanese variety, with flat florets, rich deep crimson, very effective colour.

Chrysanthemum W. Tricker (H. Cannell & Sons).—A Japanese, with broad pink florets, slightly incurved at the tips.

Chrysanthemums Miss Violet Tomlin, Miss Haggas, Vivian Morel, and Mlle. Marie Hoste (J. Laing & Sons).—Awards of merit were granted for the above varieties, the first two incurved, and the others Japanese, which have been previously described.

Cattleya Lindeni (M. J. Linden, Brussels).—A handsome and graceful *Cattleya*, with flowers of medium size, the lip of an intensely

rich magenta colour margined with gold, and veined with the same in the throat. The petals are of a delicate rosy mauve tint veined with white, the sepals pale blush or nearly white.

TUBEROUS BEGONIAS AND DAHLIAS.—Frosts have spoilt these as far as their beauty this season is concerned in most gardens, but the tubers being taken good care of will be available for next summer. Old tubers, or any three years and upwards in age, usually succeed very much better in the open beds than in pots under glass, and seeing that many of them can be split into several plants in the spring, none but tubers of inferior varieties should be thrown away. It is to be hoped the various seedlings have been duly marked, both the colour and habit of flowering being taken note of. Stored accordingly masses of one colour can be made next season, these quite eclipsing either mixed beds of Begonias or any other bedding plants near them. All ought to be lifted before very severe frosts intervene, a small portion of soil being left about the roots. Pack them closely in shallow boxes of fine moderately moist soil, remove decaying stalks when necessary, and keep cool and dry. Stored in a potting shed or outhouse it is advisable to cover the boxes with mats whenever a severe frost is anticipated. Dahlias keep well in a cool dry shed or loft, the roots being set rather closely together and well surrounded by fine and not too dry soil or sand. The more vigorous varieties, including some of the singles, will frequently survive an ordinarily severe winter left where they are. It is advisable, however, to protect the collars of the plant with a bank of ashes, and this should be done early.



FRUIT FORCING.

PEACHES AND NECTARINES.—*Earliest Forcing House.*—The trees having been at rest some time, the roof lights removed, the house thoroughly cleansed, the trees untied, pruned, dressed with an approved insecticide, re-arranged and tied on the trellis, the border surface dressed, and all prepared for a start when the time arrives, nothing further is required. If, however, the roof lights have not been removed, care must be taken not to allow the soil to become dry at the roots of the trees, as this is often a cause of the bloom buds falling. If the trees are weakly, or with a great quantity of buds, a supply of liquid manure whenever water is required will be of great benefit. The surface soil also should be removed down to the roots, not disturbing them, applying 2 to 3 inches thickness of good loam, and if the soil be light add a fourth of pounded clay or clay marl, with a bushel each of steamed bonemeal and wood ashes to every cartload of soil, thoroughly incorporated, making it firm, and giving a good watering. Borders that are rich in humus through heavy dressings of manure will be benefited by dressing with quicklime, a peck per rod being a suitable quantity, mixing with the surface soil as deep as practicable without disturbing the roots to any great extent, omitting the top-dressing before named. In treating borders, it should be practised on both the outside and inside. Lose no time in completing the pruning and dressing, cleansing the house, and admitting air to the fullest possible extent. The outside border being thoroughly moistened, it may be covered with a few inches thickness of leaves, with a little litter to prevent their blowing about.

Second Early Forced House.—The trees being leafless should be pruned after untying, dressed, and re-arranged on the trellis. This, with a thorough cleansing of the house, makes an end of insects before they became ensconced in the cracks and crevices of the structure. In pruning early forced trees it is not desirable to cut away much wood, but where weakly and crowded it should be judiciously thinned, removing any useless parts that have escaped the knife at thinning after the fruit was gathered, and any long unripened shoots may be cut back to a triple bud, making sure that the central bud is a wood bud, or to a wood bud on well ripened wood. Shoots, however, that are well ripened need not be shortened under any circumstances, having usually a few wood buds at the base and one at the extremity, the rest being fruit buds. It is, however, a great mistake to retain much wood, which weakens the trees in flowering, and there is not space to train in the young growths without crowding. Treat the trees in other respects as regards the house, and borders as advised for the earliest house.

Succession Houses.—The trees will be casting their leaves and should be pruned when they are all down, the house and trees being dressed. If the trees are too vigorous and do not set and stone the fruit satisfactorily they should be lifted, which is preferably done whilst the leaves are upon the trees, keeping the lights over the trees until the leaves have fallen. Where the roof lights are not moveable care must be taken to prevent the soil becoming dry.

Late Houses.—Where the trees are assisted in spring and as required during growth in cold periods, the wood ripening well, there will be nothing required but to admit air freely, but where green

leaves hang long it is an indication of unripe wood, and the roof lights must not be removed for some time longer, and if this condition prevails generally the trees should be lifted carefully and root-pruned. If this is performed judiciously it will not prejudice next year's crop, but it must be done whilst the foliage is still upon the trees, but with the wood firm, keeping the house rather close, the trees syringed, and the house shaded if the weather be bright. Under ordinary circumstances as to weather those precautions are not necessary. It is only when the trees are gross and the wood unripe that the careful treatment is requisite. In the case of young trees it will suffice to take out a trench one-third the distance from the stem the trees cover of trellis, and down so as to cut off all roots to the drainage, leaving the trench open for a fortnight, not allowing the soil in the radius to become so dry as to distress the foliage to a very severe degree of flagging, but not giving any water so long as the leaves maintain their persistence, and then the trench may be filled in firmly. With this check to the growth the wood and buds ripen satisfactory.

Unheated Houses.—In these ventilation must be given to the fullest possible extent, and the wood if necessary should be thinned to admit light and air freely to the growths. This ripens the wood, and where this is not sufficient over-luxuriance or a tendency to late growth is overcome by lifting, which must not be done until the wood becomes firm, and whilst the foliage is still upon the trees. Lifting and laying the roots near the surface and firm soil is the surest remedy for trees that fail to set and stone full crops of fruit. After the leaves fall the roof lights may be removed.

KITCHEN GARDEN.

CUCUMBERS IN POTS.—Open air Cucumbers have not been a great success this season. As a rule it has been too wet and sunless for them. They are now quite over, and those we have in frames are not active, indeed they too will soon be past, although fresh linings of manure have recently been applied. Like many others we have not extensive accommodation for the production of winter Cucumbers, but we have a number of plants in 12-inch pots. These are just beginning to fruit, and are likely to be exceedingly useful during the greater part of the winter. They are in a warm plant pit, but have no bottom heat, though the pots are near the hot-water pipes, and the plants are both clean and robust. As we only require a few fruits per week the supply will be ample, and those who have little space but who would still like to possess a few Cucumbers should grow their plants in pots. They are more easily accommodated in these than in a bed. They are easily kept going by giving liquid manure frequently when the pots are full of roots. The greatest mistake that is made in winter Cucumber growing is to allow the plants to make too much growth. If the main stem is taken up 2 or 3 feet and not more than 4 feet, the side shoots being closely pinched at the first joint, until the fruit there has formed, the results will be much better than if the side shoots were allowed to run out several joints. A crowded growth is produced then that is much against the formation of the fruit. It also exhausts the plant, and this must be avoided when the roots are confined to the small space of a 10-inch or 12-inch pot. When one fruit is formed at the first joint the shoot is allowed to grow anew to another joint, but no more, when another fruit appears, and in this way the plants are easily kept clean, robust, and fruitful. To allow many growths to run out and then cut them hard back, as is often done, is ruinous.

MORE LIME FOR VEGETABLE QUARTERS.—Experiments conducted for some years past lead us to assert that sufficient lime is not applied to vegetable quarters. Grubs have been unusually plentiful in Carrot, Parsley, and other quarters this season, but they have been much worse in some cases than others, and wherever lime was absent their ravages have been most destructive. Lime is an excellent preventive, while as a fertiliser it is equal in some soils to any manure. Old soil is especially benefited by it, and our crops generally have never been so robust and of such high quality as in the seasons succeeding the application of lime. We have resolved that none of our quarters shall go longer than three years without it, as most of the soil is very full of decayed leaves and other manure. The best way of dealing with it is to procure the lime quite fresh, place it in heaps of one or two barrowloads here and there on the vacant quarters, cover it over with soil as soon as it is deposited, allow it to remain covered for two days, then spread it on the ground and dig in at once. It may be applied at any time of the year, but at least a week should be allowed to pass from the time it is dug in until any crop is planted. We apply it at the rate of from 3 to 5 tons per acre, according to the condition of the soil.

LATE CAULIFLOWERS.—As usual Veitch's Autumn Giant Cauliflower is giving an ample supply. It is unique as an October sort, and the Self-protecting Broccoli succeeds it to an equally useful extent. None of them, however, will bear frost, as if the head is exposed it soon becomes brown and useless. When a quantity of these are ready and left exposed a few degrees of frost occurring unexpectedly will ruin them. It is therefore necessary to keep a look out that this should not occur. The plants should be examined twice or three times weekly, and all that have exposed heads should be cut and stored. If cut with a stem 6 inches in length, the bottom leaves cut off, only a few of the small ones left round the head, and the stem inserted in damp sand in any cool dry shed, they will remain fresh and good for upwards of three weeks. We generally fill a number of our cutting boxes with sand at this time and store the Cauliflowers in these, as they can be conveniently moved into any dry place.

FORCING KIDNEY BEANS.—These only make slow progress at this

season. Seeds sown in small pots and that have now produced plants 6 inches or more in height, should be placed into 7 inch pots. Do not crowd too many plants into one pot, give them a rich soil and a temperature of 70°. They must be kept near the glass and fully in the light, especially as they begin to show flower. It is better to give a few dozen potfuls plenty of room than try to crowd a hundred or more into a small space.

AUTUMN SOWN ONIONS.—These have become unusually large, a severe winter would be apt to cripple them greatly. Distribute a quantity of soot over the plants and between the rows, Dutch hoe them soon afterwards, then tread them on each side of the rows as firmly as possible. This treatment braces them up for the winter better than anything we have tried. Where they are valued as salad the plants should be drawn from the parts that contain the most plants.

STORED ROOTS.—As we anticipated stored roots are not keeping well. There is much decay in Potato heaps, and to prevent further loss all Potatoes should be examined as soon as possible. Turn the heaps quite over in picking out the bad tubers, and if the position they have been resting on is damp remove them to a dry place. If sound tubers have become damp through being in contact with rotten ones let the former become dry before confining them again.



APIARIAN NOTES.

VENTILATING FLOORS.

A CORRESPONDENT ("G. H. D.") requires some information respecting the above, and as others may be desirous of having a knowledge how to proceed in completing a cheap but an effective hive of great utility, I will give a description of the work. It is quite unnecessary to give full details of every part of a hive, because one part must necessarily be made to suit another. There can be little doubt but that the storifying hive will be the hive of the future, as it has been so long the successful one of the past amongst advanced bee-keepers, and that its dimensions for many reasons shall be the same—viz., 14 inches inside measure both ways, and the thickness of the timber five-eighths, and the alighting boards held to the hive by wire dowls or brass hinges for handiness in transit, the boards either being removed or folded up, the latter being the better plan. The floor and the three divisions which forms the hive must be exactly of one size, only the former being 4 or 4½ inches deep instead of 6½ inches, as are the body boxes, and the alighting boards are fixed to the floor, the alighting board proper being about 4½ inches broad, and the gangway or ladder not less than 9 inches, also hinged to the alighting board proper.

A sheet of one-eighth perforated zinc forms the floor, or it may be that having club-shaped perforations the holes, although wider apart, are larger, and allow larger pieces of *débris* to fall through without bees escaping. It is better that this sheet of perforated zinc be laid loosely upon the stand, which may have feet of angled iron screwed to the inside extreme angles of the stand. Either way, a fillet of wood runs round the inner sides of the stand about half way up in the front, and the thickness of the shutter at the back of the hive. When the shutter is fitted into the recess, a wooden button at the back holds the shutter in its place, and two nails bent downwards or a second fillet holds it from falling in the front. The shutter or false floor, it will be observed, lies at an angle, highest in the front, and allows the water evaporated by the bees to run out at the back. The whole stand and shutter should be thoroughly tarred or painted with raw oil.

The shutter should have a little opening; 5 inches long by 1 inch broad is sufficient, and at least 4 inches clear from the back, so that a shutter 4 inches broad sliding in the bars of the false floor clears the opening when drawn back. A stopper prevents it being slid too far forward when closed. I have not witnessed a single cell of foul brood amongst my hives since I adopted this method of ventilation, and would not risk sending hives a distance without it. It is a good plan, several days before moving bees, to open the ventilator or sliding shutter, so that the bees become accustomed to the opening, and do not crowd upon it.

The sides of the hive must be accurately cut to the required length, and the front and back as accurately checked to receive them, and to form a bead or projecting bottle on the ends. The check or rabbet to receive the frames must have at least three-eighths lip, the same as the checks in the end, and half an inch deep, this being the thickness of the top bar, its breadth being $1\frac{1}{4}$ inch. The cheapest and best distancers are the common tacket or shoe hobnail placed in the centre of the end piece which forms the frame, and to be clear of the top of the top bar at least quarter of an inch. Of course the end pieces should not be more than three-sixteenths of an inch from the inner sides of the front and back of the hive, and should have no bottom rail. When putting in the tackets open a vice to $1\frac{1}{2}$ inch, marking where the dwong is then open to the required width to receive the partly driven in tacket, then turn the dwong of the vice to the place which forms the $1\frac{1}{2}$ inch distance, which is the natural width bees build their combs; in lieu of a vice other guages may be used. Nine frames should measure $13\frac{1}{2}$ inches, being half inch less than the width of the hive. Allow this extra space to the two outer combs, and the bees and bee-keeper will be satisfied. Now fasten each division together by means of $1\frac{1}{2}$ inch back-flap hinges at the back, and hooks and eyes near the front on the sides, and the hive is complete, but do not neglect to have a groove on under side of the middle of top bar an eighth of an inch wide and deep. The end pieces are $5\frac{3}{4}$ long, quarter thick, and have a square tenon let into a round hole. I trust the above hints will enable anyone to understand how to complete hives and why they are so made.

There is but one objection manipulators can have to shallow framed storifying hives—viz., the combs being in two or more divisions do not give the same facilities for inspection of the hive. It may be true, but the other advantages they possess far outweigh this, if it can be really so called, a disadvantage. Those who know how to manipulate a shallow framed hive properly, and a very little practice will enable anyone in a short time to do so, when he will realise the fact that any difficulty in that respect is more in name than practice. In point of economy alone they far supersede other sorts, and are not exposed to the danger of collapse of the combs when in transit or during a high temperature as are the combs in deep framed hives, neither is there any waste of comb when partial deprivation of honey takes place, and which, as a rule, is always free from pollen in the combs of the upper storey.

WASTE OF HONEY AND ENERGY.

Were we to accept the statements made by many writers that it takes 20 lbs. of honey to produce 1 lb. of wax we would be on the wrong track, and even as we do not believe the assertion without laying some facts before your readers we should be remiss in our duties, and as misleading as those who have repeatedly asserted what we know full well is not true. To make things clear I was asked to examine some hives according to the orthodox fashion of the "modern bee-keeper," whose belief amongst other errors is as stated above. The perfect impermeable quilt was there. The stimulative feeder and other objectionable things were also present, the direct cause of damp interior and rotten combs, which to replace the latter at least 20 lbs. of honey (according to the 20-lb. theory) would be required, and as a natural thing with spring comb-building would be drone comb, which the stores inside could not supply for its formation nor the rapid decreasing population of the hive be able to restore.

HIVES HAVING TRANSVERSE COMBS.

It has also been repeatedly asserted that bees always store their honey in what is termed "combination" hives furthest from the entrance. A few days ago I was asked to overhaul a number of these hives. In every instance the greatest quantity of the honey was stored above and in the centre combs, a position that at once pointed to the fallacy of the teaching and to the unsuitability of such hives for bee-keeping.—A LANARKSHIRE BEE-KEEPER.



•• All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Chrysanthemum Show (W.).—Since you say the Show referred to is produced "as an advertisement for cuttings or plants," the proper course is to do the same as other business people do—advertise it, and it would then have some claim to recognition. We have received the list.

Heavy Soil (Sarnia).—The sample you send is a marly clay, and we should not rely on it for growing any plants in its present state. If sweetened by exposure to the air it might be useful for mixing with light soils, and for any other purpose we should not think it worth digging from a depth of 8 feet. We find 8 inches quite deep enough for digging soil for potting purposes.

Pyrus (Cydonia) japonica Fruit (W. M.).—We have seen many such fruits as those you describe, and have heard of some having been preserved, also of persons who liked them, and of others who did not, these being in the majority. It is a question of taste. We are not aware that the fruit, preserved or not, has any market value, if that is what you want to know, for your postcard inquiry is as vague as it is brief.

Exhibiting Pompons (Exhibitor).—According to the National Chrysanthemum Society's catalogue the ordinary Pompons and Anemone Pompons are as distinct as are large Anemones and reflexed varieties, therefore are accorded distinct sections. It would be very unwise to mix them in a class unless the schedule clearly stated that this might be done, for committees can make what exceptions they like to general rules.

Insects on Chrysanthemum (Sender).—The insects are aphides, and so far as we know have no recognised specific name, and therefore may be appropriately referred to as Aphis Chrysanthemi. It is likely that the species is continued from year to year by hibernating females, which congregate about the root near the surface of the soil, or in dead leaves that may be about the stems, and produce young in spring. Preventive measures, as naturally suggest themselves in winter, may be expected to diminish the summer visitation of the species.

Doubtful Chrysanthemums (Inquirer).—We are not prepared to say whether a stand in which you place John Doughty, Bronze Queen, John Lambert and Golden Queen would be disqualified or not, because we are informed that cuttings have "got mixed" in some instances, and some blooms we have seen appear to support the proposition. Follow Mr. Molyneux's advice in another column, and never stage a doubtful bloom. That was his plan, and during his showing career he was never disqualified and not very often defeated. It is a very great mistake for exhibitors to stage blooms simply because the varieties are "new," regardless of their distinctness and merit.

Blight on Apple Trees (Beta).—The specimen you have sent represents one of the worst examples of injury by the American blight (Aphis lanigera) we have seen. All such branches should be cut out of young trees, even if this amounts to almost cutting them down, for the origination of healthy growths from below the swollen parts, which are the consequence of ruptured sap vessels. The prunings should be burned, and every part of the trees should be thoroughly washed with a petroleum and softsoap solution, made by dissolving 3 or 4 ounces of the soap in a gallon of boiling soft water, stirring very briskly in while hot half a gill of petroleum. Apply with a brush, forcing the solution into every fissure for reaching the insects. The surface soil should be scraped from under the trees, a good dressing of lime given, and fresh soil placed over it from another part of the garden. Order Gooseberry, Currant, and Filbert bushes at once, and plant them as soon as they arrive if the soil is in free working condition. If it is not, dig a trench, place the roots in it, and cover them well with soil till a favourable opportunity occurs for planting.

Good Apples and Pears (H. C. B.).—You ask for the names of two or three of the best early and the best late Pears; also of the best

early and late Apples. We have had too much experience with fruits, and noticed their variation under different circumstances, to commit ourselves so far as to name any two or three as absolutely the "best," which would mean that all others are inferior to them. Besides, some varieties are the best for one property, some for another, such as size, quality, or productiveness. Again, some of the very early sorts are not so good as others that are a little later, while some excellent late Pears do not ripen in all positions. We can only say that three good Pears moderately early are Clapp's Favourite, Beurré Superfin, and Louise Bonne of Jersey; one midseason, Doyenné du Comice; three late, Glou Morceau, Josephine de Malines, and Bergamotte Esperen. We do not say that those are the "best," but we know they are good when in the best condition. Good early Apples are Irish Peach, Beauty of Bath, and Kerry Pippin; for succeeding them, Cox's Orange Pippin, Claygate Pearmain, and Braddick's Nonpareil. You should have stated your object. Those named we do not consider the best for market purposes, and we have only named dessert Apples, presuming those are what you require. If you write again, please be more explicit.

Destructive Caterpillars (R. A.).—These are the half-grown caterpillars of the great yellow underwing, *Tryphæna pronuba*, which has been abundant in many parts of England this autumn, though it is every season more or less troublesome to gardeners and farmers. It feeds from early autumn to spring, unless the weather be severe, and varies its operations by attacking the roots during the day, and then issues from the soil at night to gnaw the stems or crowns of plants. Gas lime, at the rate of 2 ozs. or 3 ozs. to the square yard, pointed in at the least a month before sowing or planting, is an excellent grub antidote, but injurious to crops if used in excess or at the time of inserting the plants. It should be well mixed with the soil near the surface.

Rose Heps (W. B.).—These are not in any way injured by remaining on the trees to be frozen to some extent; indeed, it is questionable if severe frosts are detrimental to their germination. Gather them when ripe, open them, and store the seeds in damp cocoa-nut fibre refuse or leaf mould till spring. They may be sown either in pots or boxes in a frame on a mild hotbed, or in drills in the open ground in March. Artificial heat accelerates germination, but as the first essential of the Rose is hardiness some raisers sow in the open on the assumption that only seedlings that prove their undoubted hardiness are reliable for propagation. Some of the seeds are often slow in germinating, therefore there must be no undue haste in disturbing the beds, or withholding water from pots or boxes in which the seeds have been sown. As you do not state your conveniences for raising the plants a choice of methods is given. Cover the seeds an inch deep, and keep the soil uniformly moist by shading to arrest evaporation, and watering to supply moisture as it may be required.

Fungus on Celery (Inquirer).—The name of the fungus which covers Celery leaves with dark brown spots is *Puccinia apii*. Mr. W. G. Smith says:—"When seeds are sown which have been gathered from diseased Celery plants the youngest seedlings suffer from the same disease as the parent plants. If alternate rows of seeds are sown, one row with seeds taken from diseased plants, the other from sound plants, the first row will exhibit diseased seedlings, and the other seedlings be free from disease. The same phenomenon holds good with seeds taken from diseased and sound Hollyhocks, with seeds from mildewed and clean corn, and with seeds and seedlings of other plants which suffer from the attacks of parasitic fungi. We have, with many facts like the above in view, expressed an opinion (which has, however, met with great opposition) that many diseases of plants, like certain diseases of animals, are hereditary. The spawn or mycelium of the fungus can sometimes be seen inside the seed. Our advice, therefore, always is—burn or deeply bury all infected foliage, stems, or roots, and never harvest seeds from diseased plants. In some cases of plant diseases, where the disease is known to be not hereditary, there is a strong tendency amongst certain breeds to take disease. In continental books the Celery fungus is now termed *Puccinia bullata*. The same parasite grows on Hemlock (*Conium*), Fool's Parsley (*Aethusa*) as well as on Celery (*Apium*). The varieties have been distinguished as *P. conii*, *P. æthuse*, and *P. apii*. We doubt if there is any remedy for plants so seriously affected, and we can only suggest applications of sulphur. Seed should be obtained from another source next year, and the crop grown in another part of the garden."

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*George Hawkins*).—Golden Reinette. (*Thomas Trollope*).—Beauty of Kent. (*C. C.*).—Norfolk Stone Pippin. (*Inquirer*).—Washington. (*W. S. Knaresborough*).—Unknown, probably a local variety. (*Murroe*).—1, Golden Noble; 2, Coe's Golden Drop; Pear, Dr. Nelis. (*J. W. L.*).—1, Besspool; 2, Mère de Mèrage; 3, Alfriston. (*J. W. R. Formby*).—1, Fondante d'Automne; 2, Easter Beurré; 3, Josephine de Malines; 5, Northern Greening; 6, Winter Greening.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes.

Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*Inquirer*).—*Tecoma radicans*. (*A. H.*).—1, *Aster latus*; 2, *Aster Novæ Belgii*; 3, *Helianthus lætiflorus*; 5, *Helianthus decapetalus*. (*R. C.*).—1, *Aster horizontalis*; 2, *Pyrethrum uliginosum*; 3, *Aster Novæ Angliæ*. (*R. M.*).—*Arundo Phragmites*.

COVENT GARDEN MARKET.—OCTOBER 29TH.

NOTHING of importance to note. Business remains with no alteration, and supplies equal to demand.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.	
Apples, $\frac{1}{2}$ sieve	2	6	to	6	0	Lemons, case	35	0	to 45	0
" Nova Scotia and						Melons, each	1	0	to 2	0
" Canada, per barrel	0	0		0	0	Oranges, per 100	4	0		9
" Tasmanian, p. case	0	0		0	0	Peaches, dozen	3	0		12
Grapes, per lb.	0	9		3	0	Plums, $\frac{1}{2}$ sieve	4	0		9
Kentish Filberts, 100 lbs.	0	0		0	0	St. Michael Pines, each..	2	0		6
" Cobs	70	0		75	0	Strawberries, per lb. ..	0	0		0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.	
Artichokes, dozen	0	0	to	0	0	Mushrooms, punnet ..	1	6	to 2	0
Asparagus, bundle ..	0	0		0	0	Mustard & Cress, punnet	0	2		0
Beans, Kidney, per lb. ..	0	3		0	0	Onions, bushel. . . .	3	0		4
Beet, Red, dozen	1	0		0	0	Parsley, dozen bunches	2	0		3
Brussels Sprouts, $\frac{1}{2}$ sieve	1	9		2	0	Parsnips, dozen	1	0		0
Cabbage, dozen	1	6		0	0	Potatoes, per cwt. ..	3	0		4
Carrots, bunch	0	4		0	0	" New, per lb. ..	0	0		0
Cauliflowers, dozen.. ..	2	0		4	0	Rhubarb, bundle	0	2		0
Celery, bundle	1	0		1	3	Salsafy, bundle	1	0		1
Coleworts, doz. bunches	2	0		4	0	Scorzonera, bundle ..	1	6		0
Cucumbers, doz.	2	0		3	6	Seakale, per bkt. ..	0	0		0
Endive, dozen	1	0		0	0	Shallots, per lb.	0	3		0
Herbs, bunch	0	2		0	0	Spinach, bushel	1	0		2
Leeks, bunch	0	2		0	0	Tomatoes, per lb. ..	0	4		0
Lettuce, dozen	0	9		1	3	Turnips, bunch	0	0		0

CUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	4	0	to	8	0	Marguerites, 12 bunches	2	0	to 6 0
Asters, per bunch, French	1	0		1	6	Maidenhair Fern, dozen			
" English, 12 bunchs.	4	0		9	0	bunches	4	0	9 0
Bouvardias, bunch ..	0	6		1	0	Mignonette, 12 bunches..	2	0	4 0
Carnations, 12 bunches ..	6	0		9	0	Pansies, dozen bunches ..	0	0	0 0
" 12 blooms ..	1	0		2	0	Pelargoniums, 12 trusses	0	9	1 0
Chrysanthemum, 12 blms.	1	0		3	0	" scarlet, 12 bunchs	4	0	6 0
" 12 bunches	4	0		12	0	Pinks (various), doz. bchs.	6	0	9 0
Cornflower, doz. bunches	0	0		0	0	Primula (double), 12 sprays	0	6	1 0
Dahlias, dozen bunches..	2	0		4	0	Roses (indoor), dozen ..	0	6	1 6
Eucharis, dozen ..	4	0		6	0	" Red (Eng.) 12 bchs.	4	0	8 0
Forget-me-not, doz. bunch.	1	6		4	0	" Red, 12 blooms ..	1	0	2 0
Gardenias, 12 blooms ..	3	0		6	0	" Tea, white, dozen..	0	6	2 0
Gladiolus, 12 bunches ..	8	0		18	0	" Yellow	2	0	4 0
Gypsophila, per bunch ..	0	0		0	0	Stocks, dozen bunches ..	0	0	0 0
Lapageria, 12 blooms ..	2	0		4	0	Sweet Peas, 12 bunches	0	0	0 0
Lavender, dozen bunches	0	0		0	0	Tuberose, 12 blooms ..	0	4	0 9
Lilac (French) per bunch	5	0		6	0	Violets (Pamre)	2	6	3 6
Lilium, various, 12 blms.	1	0		2	0	" (dark)	1	0	2 0
" longiflorum, 12 blms.	4	0		6	0	" (English), doz. bunch	1	0	2 0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.	
Aralia Sieboldi, dozen ..	6	0	to	12	0	Geraniums Scarlet, p. doz.	2	0	to 6	0
Arbor Vitæ (golden) doz.	6	0		8	0	Heliotrope, per doz. ..	4	0	6	0
Asters, dozen pots ..	6	0		9	0	Hydrangea, doz. pots ..	9	0	18	0
Calceolaria, per doz. ..	0	0		0	0	Lilium lancifolium, doz.	9	0	18	0
Chrysanthemum, per doz.	6	0		24	0	„ longiflorum, doz.	0	0	0	0
Climbing Plants, various,						Lily of the Valley, 12 pots	0	0	0	0
dozen pots	4	0		9	0	Lobelia, per doz.	0	0	0	0
Dracæna terminalis, doz.	24	0		42	0	Marguerite Daisy, dozen	6	0	12	0
„ viridis, dozen ..	12	0		24	0	Mignonette, per dozen ..	4	0	6	0
Erica, Cavendishi, per pt.	0	0		0	0	Musk, per dozen	0	0	0	0
„ various, dozen ..	12	0		18	0	Myrtles, dozen	6	0	12	0
Euonymus, var., dozen ..	6	0		18	0	Nasturtiums, dozen pots	0	0	0	0
Evergreens, in var., dozen	6	0		24	0	Palms, in var., each ..	2	6	21	0
Ferns, in variety, dozen..	4	0		18	0	Pelargoniums, per doz. ..	0	0	0	0
Ficus elastica, each ..	1	6		7	0	Rhodanthe, per dozen ..	0	0	0	0
Foliage plants, var., each	2	0		10	0	Stocks, per doz.	0	0	0	0
Fuchsia, per doz. .. .	4	0		9	0	Tropæolums, various, per				
Geraniums, Ivy, per doz.	0	0		0	0	dozen	0	0	0	0



THE NEW "ROYAL" JOURNAL.

MUCH more valuable than any former efforts of his is another article on "Covered Cattle Yards," by Mr. W. J. Moscrop, in the new number of the Journal of the Royal Agricultural Society of England, because it goes so carefully into details, and is therefore

proportionately useful. Ventilation receives due attention, the different kinds of roofs are well illustrated by woodcuts, quantities and prices are appended, all structural points are explained, and the advantages of such structures are set forth as tending to the economy of food in conjunction with the health and well-doing of stock, the superiority of manure and economy in its application, and in the saving of litter, by all which the ingenious author quotes figures to show how, in his opinion, a saving and gain of £3 11s. 10d. per head of cattle is effected. He usefully gives point to his article by his closing paragraph, in which he says, "At the present time perhaps few ways are open to a landowner in which he can so readily and greatly assist his tenants, whilst indirectly benefiting himself, as by the equipment of his estate with covered yards. On many estates this has been done, and my parting word to the owners of those where it has not is, Lose no time in effecting a work that ranks so high in the list of farm economy, which judiciously carried out will prove a lasting benefit to the tenants, tend to an enhanced value of property, and thus become a sound investment of capital."

Though Professor Green's paper on "The Seed and its Germination" is unlikely to excite much attention on the part of practical farmers, it is nevertheless an important contribution to agricultural literature, as showing the reason why of a process of such vital importance, and it is surely something gained when men of science can say positively, as in this case, "We know."

Farming in Devon and Cornwall by Mr. F. Punchard marks time, and tells an interesting tale of the progress of these two remarkable counties. The account of fruit and vegetable farming in Cornwall is especially interesting just now, when general attention is being drawn to the subject; and an account of 300 tons of Strawberries, 4500 tons of new Potatoes, and 8000 tons of Broccoli sent by the Great Western Railway alone last year from the two counties to London, Manchester, Edinburgh, and other large centres, gives some idea of the extent of this trade, which now embraces Tomatoes, Raspberries, Gooseberries, and other bush and tree fruits. Rather full details of the cultivation of new Potatoes are given, but the writer is somewhat loose in his statements about the quantity of manure used, and the amount realised per acre. Devon live stock deservedly has an interesting chapter, and the fact is noteworthy that this county can boast of two native breeds of cattle (North Devon and South Hammers), four of sheep (Devon Longwool, South Hams, Dartmoor, and Exmoor), and two of ponies (Dartmoor and Exmoor). South Hammer cattle, we are told, have been much improved during the last fifteen years, and the cows are remarkable for their deep milking properties, 24 quarts a day being no unusual quantity for one of them to give.

The Devonshire water meadows and Devonshire cream each have a chapter, and an account is also given of the Prison Farm in the wilds of Dartmoor, where the tillage of 2000 acres is done entirely by the convicts, and the barren land reclaimed to such good purpose that one field in particular is mentioned as at one time being mostly rushes and now grazing a bullock per acre. The flock of Improved Dartmoor sheep at this farm must be remarkable animals, for the fleece of a ram is mentioned as weighing 27 lbs., and hoggets as averaging 14 lbs. to 15 lbs. per fleece, the price expected for the wool being 7½d. to 8d. per lb., or 18s. for the fleece of the ram!

A full report is given of the Plymouth meeting, and there are special reports of certain important features of the Show. No doubt the trials of light portable motors show improvements in construction and in economy of fuel, but this particular trial appears to us to take a flight quite out of the reach of ordinary farm requirements. Economy of fuel is all very well, but what is wanted for an ordinary farm is a cheap one-horse power motor within the means of an ordinary tenant farmer, say at about the price of a full-sized waggon, and the Society would certainly do well to encourage the production of such a motor, suitable for cutting chaff, crushing corn, and similar work.

With this copy of the Royal Journal nomination papers were sent out with an invitation for members to select judges for the next meeting. This was wisely done, so wisely that we are induced to hope members may eventually be asked in a similar manner to call attention to any want or possible improvement in agriculture which appears to them to fall within the far-reaching scope of the Society's work, and so add to its usefulness.

WORK ON THE HOME FARM.

Now is the time when a regular and full supply of eggs affords the best proof of skilful poultry management. The early pullets reserved specially for this purpose are laying tolerably well, and they must receive every advantage of draught and damp proof poultry houses, mixed food, a snug shelter by day open to the south, with plenty of dust and raised places, not perches, but low heaps of dry litter, or a platform raised a few inches from the floor; anything, in point of fact, which may help them to keep warm and dry. They should be shut in the roosting places at night, and not allowed to go out early at this time of year. They show plainly enough by their habits the sort of treatment they require. On a warm sunny day they are spread far and wide over the meadows; on a dull, cold, or wet day they keep as much under shelter as they can, many of them going up on the perches. Meal, crushed potatoes, kitchen scraps, and a little whole maize mixed with warm water is generally given now, no food being allowed to lie about, only as much as can be cleared up quickly being used each time. We prefer feeding ducks by themselves, for they are so greedy that they gobble up much more than their share if feed with other poultry. Now that turkey poults are required for table regularly, it is well to select the stock birds for next season, and mark them, or the best birds will be selected, till in the end there will only be inferior ones left for breeding.

We have begun curing bacon hogs for drying, as the store of bacon is running low, and there are complaints of its saltiness. We can manage some mild cured bacon during the winter and spring months, but for keeping in a sweet and wholesome condition throughout summer, it must be well salted and dried. An occasional porker of 60 or 70 lbs. weight is required for table, which can always be had, as we take care to have litters of young pigs in succession, upon the principle of breeding as often and as many as possible. Stubble pigs are now being finished and sold in batches of a dozen or two, and we find this plan better than keeping them for large jointers. Care is taken to keep stys and yards clean and well littered, both for the comfort of the pigs and to prevent disease.

OUR LETTER BOX.

The Price of Mangolds (G. C.).—The average price per ton for Mangolds may be placed at 15s. It is affected by locality very much. We have known them to be sold at 10s., and at various prices up to £1 per ton. The price in your neighbourhood is more likely to approach the higher than the lower rate, and if you require any considerable quantity it would be as well to ascertain prices on rail in some quiet district twenty or thirty miles farther from London for comparison with your local price.

Windsor Beans for Pigs (G. A.).—The Windsor Beans are an excellent addition to the food of pigs or any other animals of the farm. About a quart daily of whole Beans may be given to a full grown pig that is being fattened, and beanmeal may be mixed with advantage with middlings or pollard for porkers. For store pigs the Beans are not used, simply because other and cheaper food answers perfectly well for them. We hope shortly to deal fully with the entire question of pig feeding.

METEOROLOGICAL OBSERVATIONS.

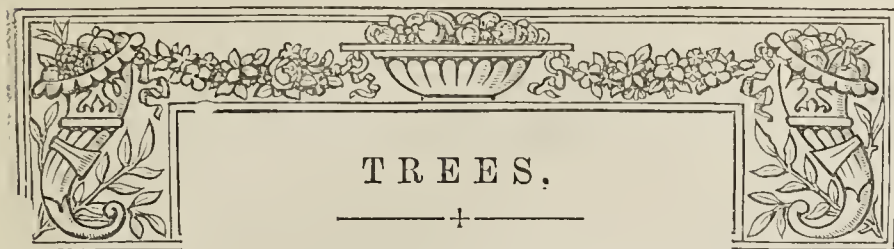
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain
1890. October.		Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min.	In sun.	On grass		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.		
Sunday 19		30.191	46.3	42.2	W.	48.2	51.2	44.5	65.3	38.8	—	
Monday 20		30.277	47.6	43.5	N.	48.2	52.9	44.4	66.3	42.9	0.092	
Tuesday 21		30.300	45.6	45.1	E.	48.8	55.1	44.1	77.2	43.3	—	
Wednesday ... 22		30.539	41.3	39.4	E.	48.5	51.2	37.4	64.9	29.3	—	
Thursday 23		30.490	49.1	48.2	W.	47.2	54.9	37.3	61.6	31.9	—	
Friday 24		30.252	51.7	49.6	S.W.	48.2	57.6	48.6	70.4	47.0	0.053	
Saturday 25		29.753	55.1	53.7	W.	49.7	56.5	51.0	61.1	46.1	0.280	
		30.257	48.1	46.0		48.4	54.2	43.9	66.7	39.9	0.428	

REMARKS.

19th.—Fine and dry, with cloudy sky.
 20th.—Overcast throughout; occasional drizzle in evening.
 21st.—Dull and rainy till 10 A.M.; overcast morning; generally bright in afternoon.
 22nd.—Misty early; bright day.
 23rd.—Fair and pleasant, though sunless.
 24th.—Mild and generally dull, but occasional sunshine.
 25th.—Mild, dull, and damp till 11 A.M., then cooler and wet till 3.30 P.M.; bright moonlight evening and night.
 An average autumnal week, generally fine.—G. J. SYMONS.



“NOT quite all Chrysanthemums, if you please, Mr. Editor, nor even all fruit or all Orchids, Roses, Daffodils, or herbaceous plants. Something of each of these if you like, and a good deal of any of them at appropriate seasons, but do not forget there are trees.” Thus writes one who enjoys his garden and all that is cultivated in it, but he evidently thinks that the flowers of our stoves, greenhouses, and gardens receive the lion’s share of attention in these days, that the fruit “boom” is being sounded loudly, but that trees for use and ornament are not having a corresponding share of attention. We are inclined to think our correspondent is right, but in giving our adherence to the principle embodied in his short, terse note it is with no wish that there should be any cessation of interest in flower and fruit culture, but only that more attention should be bestowed on trees.

“Do not forget there are trees !” Those six words we suspect are intended to convey something more than a reminder—namely, a delicately suggested reproach, not to ourselves alone, or perhaps mainly, but to proprietors of many estates that might be improved and beautified by trees wisely chosen, well planted, and judiciously managed ; also to municipal and other authorities, on whom devolves the duty of providing and maintaining public parks, also of planting trees in and near towns for rendering them more pleasant to their populations. For ourselves we do not forget there are trees. We have of late had attention directed to their planting and management by able contributors, and we have much more that we think both interesting and useful to record in these pages. We have long regretted to see trees that have for years imparted grandeur to many a fine demesne going not gradually but rapidly to decay, and few or no attempts made to provide successors. Also it is not indicative of good management to see, as all who are in the least observant cultivators must see, the acres, even miles, of scrubby waste that might have been occupied with trees handsome or useful or both, for if the combination of beauty with utility can be seen anywhere, it is in thrifty plantations of appropriate trees. Many examples prove this in different parts of the country, for happily the neglect of arboriculture is not apparent everywhere, though unfortunately it is far too common.

Again, where planting has been done during recent years in public and private parks and gardens, it is nothing less than deplorable to see in so many of them what can only be fittingly described as the reckless method in which the work was done, and the subsequent ruin of thousands of trees. Obviously if the proprietor of an estate wishes to turn it into a jungle, he has a right to do so. He pleases himself for the time, but of necessity must leave a wild unproductive thicket behind him ; whereas he who proceeds on different lines, in accordance with sound principles, provides noble memorials of his thought and care to be enjoyed by succeeding generations. But even on the basis of private action—that he who pays the piper has a right to choose the tune—we have the right when the public finds the money in the form of rates for planting and maintaining public parks, to protest against the unscientific and unsystematic manner in which the planting has been in most cases done, and the subsequent spoliation of trees that has followed. “Bundle them in” appears in too many instances to have been the rule in the first place, and “let them alone” the policy afterwards. Incalculable benefit has been conferred on

communities by the formation of public parks in populous districts, but all the same, thousands of pounds of public money have been unwisely spent in them, on trees and shrubs to be spoiled, and in a few years’ time not one tree out of a hundred will be worthy of its name.

We do not in the least object to anything in the letter that has elicited these remarks. It is time that more attention was given to the planting of useful and beautiful deciduous trees, for beautiful many of them are which are little planted, as may be seen in those nurseries which contain rich collections. Conifers are handsome, and if judiciously planted effective, but in too many instances they have been so crowded into parks and gardens for “immediate effect,” and deciduous trees either excluded or spoiled, that the result is neither cheerful nor agreeable, but funereal. We are glad that the Royal Horticultural Society has at last determined to elicit information on the subject of trees, even if at present restricted to Conifers. It is quite large enough and important enough for a Chiswick conference, but we rest more firmly than ever in the belief that the Society does not do the best for the public by the slow production and restricted distribution of the information acquired at these conferences, and by lectures that few hear and which a comparatively small section of the horticultural community can ever see. Judging from the précis of Dr. Masters’ lecture on trees and shrubs in towns last week, it was most comprehensive, and could not be otherwise than full of instruction and valuable suggestions. Undoubtedly worthy of prompt and wide circulation, it must, under ordinary conditions, remain in obscurity for a considerable time, till the best planting season is over, and then it will not be seen except by a very small minority who might benefit by its teaching. That, however, does not concern ourselves. As above mentioned we have much matter on trees and shrubs awaiting publication. Among other competent men Mr. E. Luckhurst, who has planted trees extensively for use and ornament, and who is now engaged in estate improvement, writes thus on “Tree and Shrub Groups : ”

“Taken in its literal sense of an assemblage of figures forming an artistic whole, the term group, as applied to an arrangement of trees and shrubs, is most expressive and appropriate. So pray remember, brother planters, that your grouping this season must be really artistic and not fanciful ; and if you are sensible that your work is more likely to prove an outcome of fancy, and not an embodiment of cultivated taste, then do not venture rashly upon it, for every error will become more conspicuous and offensive with tree and shrub development, many a fault that is unseen by an ordinary observer at first becoming so accentuated by growth as to afford tangible evidence that a thing of beauty in the wrong place is certainly not a joy for ever.

“But good taste may also make mistakes in planting by falling into the very common error of looking only to immediate effect, and planting much too thickly, with the inevitable result of crowding in the course of two or three years, when beauty of form and individuality are soon lost, and the clump becomes a mere thicket. If immediate effect is insisted upon, let it be clearly understood how soon thinning will become necessary ; then first of all plant the permanent trees, and afterwards proceed to fill in the intermediate spaces, taking especial care to afford the permanent trees ample space for root and branch growth. When shelter only is required for the permanent trees, Larch or *Pinus austriaca* answer well, preference being usually given to Larch because of its greater value when cut.

“Before planting at all the whole matter should have most careful consideration, and the results will very much depend upon the decision arrived at, as well as upon the execution of the work. First of all try to grasp fully what you have to do, and then do it in the best possible manner. Let it not be thought that I wish to see a garden or park with every tree or shrub standing out simply as plain and precise as the lay figures in an artist’s studio. There is

beauty—often great beauty—even in a thicket, but if you intend having a thicket, plant for it just as carefully as you plant for fine specimens, but neither should be the result of an accident. The individuality of a grove or thicket are as distinct, and often more telling, than that of single specimens, and both are attractive features in a garden. Here is a charming picture taken from an account of a visit to Herring the artist's Kentish home. 'White and red Rosebuds just bursting into bloom, clustered round the verandah, and from it the outline of the pleasant woods of Penshurst, which

" ' Heard the sounds of Sydney's song,
Perchance of Surrey's reed, ' "

was just visible in the drowsy distance. Partridges were feeding on the lawn, and scarcely caring to rise on the wing, or run behind the purple Beech at your approach; the deep coo of the wood pigeons as they perch on the Scotch and Silver Firs, which towered above the thickly interlaced grove of Holly and Laburnum, so vocal with its song of spring, was all in harmony with a painter's home.' How it breathes of the restful seclusion and quiet beauty of a home in the country! All is in harmonious repose, and the purple Beech, Firs, Holly, and Laburnum, and clustering Rosebuds all appeal to one like old familiar friends. There is an amount of character about every one of them that tells in a garden as few introductions of later date have done. Breadth of colouring always tells, and is far more satisfactory than a motley group that is more like a patch taken from a nurseryman's show borders than anything else. I once designed a garden which contained many raised banks with bold curves and deep nooks, each of which should have had its own peculiar features distinct in themselves, yet in harmony with the remainder. But unfortunately the planting was placed in the hands of a nurseryman, who simply crammed the whole of the borders with choice specimens, with a result of singular uniformity, utterly devoid of repose, and which was decidedly insipid after one inspection.

"In contrast with this mistake take another bank crowned with *Pinus insignis*, which in some parts came right down to the bottom of the bank, sweeping thence upwards and along the slopes in graceful curves, in which was space for Silver Birches, Liquidamber, Scarlet Horse Chestnut, some of the best Maples, Scarlet Oak, Mountain Ash, Snowy Mespilus, and Acacia. Some curves contained two or three of these lovely deciduous gems, while others had only one of them. The effect was indeed most pleasing, and the scene grows in beauty year by year, so much so that I hope to repeat it elsewhere. One only regrets that *Pinus insignis* cannot be planted more generally, for where it does answer it is a veritable queen among *Pinuses*.

"A much bolder effect upon a hillside was obtained by a free use of large masses of *Pinus austriaca*, Larch, Scotch Fir, Beech, Wild Cherry, Maples, Horse Chestnuts, Tulip Trees, Scarlet Oak, and White Birch. The effect during summer is exceedingly good, and in autumn it is lovely. This blending of deciduous with evergreen growth is always desirable, and is entirely satisfactory in skilful hands. It gives the planter scope for tasteful combinations, and imparts clothing and warmth to a landscape throughout the year.

"How frequently has one cause for regret, both at unskilful grouping and the subsequent neglect of trees that are so generally planted too thickly. In my long journeys by road and rail it is quite an exception to meet with really well managed timber. Even hedgerow trees are seldom fine timber or flourishing specimens, and belts and clumps frequently have an air of neglect, which betokens all too plainly a lack of knowledge, to use no stronger term. Much caution is necessary in any attempt at the improvement of trees that have often been left untouched and uncared for during many years. I have occasionally been consulted about them, and am only too glad when judicious thinning and trimming prove to be possible."

It will be conceded that our correspondent writes sensibly, and

the work he has done affords sufficient evidence of his capacity to teach sound doctrine on the subject in question.

HARDY FLOWER NOTES.

THE weather, which for some days was exceedingly stormy, has again become more settled, and as usual, frost not having been so severe as further inland, flowers have not suffered much. We have still Dahlias in flower, and *Tropæolums*, among the first to suffer in frost, are yet in bloom. This being the case with such tender plants, hardy flowers were comparatively uninjured. The *Asters* are among the finest plants in the garden at present, and one is glad to find them becoming increasingly appreciated. I have of late been repeatedly asked by friends if I could give them pieces of such fine varieties as *amellus bessarabicus*, *novæ-angliæ ruber formosissimus*, *longifolius* var. *formosus*, and *diffusus* var. *horizontalis*. The latter has attracted much attention when in full flower, as it has been for a fortnight or more, and for neatness of habit and general gracefulness of appearance it is difficult to find a compeer. The flowers are very small—white, with red centres and somewhat reflexed petals. Individually, or when cut, these flowers are of little effect, but the plant when in flower is exceedingly pleasing, the deep green foliage and the multitude of flowers making it look like a bush sprinkled plentifully with snowflakes. With me it grows about 3 feet in height. I have had this species for some twelve or thirteen years, and am a little surprised to find some good hardy plant growers who have been until now unacquainted with it.

A. formosissimus well deserves its specific name, which means "most beautiful." It is of good habit, grows with me about 4 feet, and produces many flowers of the finest colour. The fault of the varieties of *A. novæ-angliæ* is their ungainly habit and the comparatively few flowers produced for cutting purposes. It is, however, invaluable. *Chrysanthemums* are still aiding in the garden display, and we hope the increasing interest taken in October flowering varieties will add some more varieties which will prolong their season outside.

We have, as usual with mild weather in autumn, many unseasonable flowers. *Alyssum saxatile* has been in flower for about two months, but the appearance it presents is most forlorn as compared with its effect in spring. Instead of the masses of old gold covering the leaves as with a carpet of cloth of gold, a few stray spikes only are thrown up above the greyish leaves of the plant, and one longs for the time when its vernal robe will again cover it with beauty. *Auriculas* and *Primroses* must needs present themselves, while one or two of the giant *Thriffs* which with me are almost continuous bloomers, lift their tall wiry stems above their pretty tufts of grass-like leaves. Some of the *Aubrietias* have never ceased to flower all the season, but, like the *Alyssum*, they only present the shadow of things to come. *Erinus alpinus*, which is quite at home in my light soil, throws up many stray spikes of its pretty little flowers. Seedlings of this vary considerably in colour, some pale, some bright purple, and some bright rose. *Erysimum pulchellum* is bearing many little yellow flowers, which are borne on extremely short stems hardly rising among the foliage. These flowers are not nearly so freely produced as in spring, but as a set-off to this the spring flowers are carried on stalks which are then too long in proportion to the size of the flowers. I do not believe this will ever become a popular or useful border plant, nor do I think it will be thought one of the choicest of our rock plants; but I feel sure if more could only see it as it does with me, it would be more generally grown. I grow it on a narrow ledge of the rockery less than 3 inches across, and allow it to grow down over the front of a large stone, which is soon covered with a cushion of evergreen small Wallflower-like leaves. As a covering plant for an upright stone it has few equals. I wish, however, to be perfectly frank as to its defects, and thus have again to warn the reader that its spring effect is not so neat as one would wish. It seems to become better the longer it is established, as last year, after being four years planted, it was finer than ever. This Hedge Mustard ("popular" names are not always attractive) is easily grown from seed, and large plants are difficult to establish.

Eucomis punctata, spoken of on page 335 by Mr. Skinner, is quite hardy with us here, requiring no protection. My plant did not flower this year, having been robbed by another flower being too close, but it flowers well here and in some other gardens in the vicinity. It is well worth growing, and although dull in colour it is a plant which stands and needs careful inspection to appreciate thoroughly. What a harbour it is for small flies, attracted probably by the perfume, which is so powerful as to be hardly agreeable. I have never seen a bee on this plant. Can anyone state anything as to this point? *Anemones* are again beginning to flower. Last winter we had them in the open all throughout the winter with a

mat supported above them on hard nights, and this season I intend filling a frame with Anemones, as they are most valuable for cutting, lasting long in water, and many are of exquisite colouring.—S. ARNOTT, *Dumfries*.

SYRINGING.

SYRINGING is a very important aid to successful gardening, possessing, as it does, the twofold virtue of assisting growth and keeping it in a clean healthy condition afterwards. But whilst a most useful agency when properly applied, what may be termed reckless syringing cannot be too strongly condemned. To syringe a plant or house a certain number of times in a day regardless of all conditions is enough to bring the practice into disrepute, and to condemn the use for causes which ought properly to be credited to the abuse, although, like most other implements, the dangerous qualities of the syringe are mainly brought out when placed in the hands of the inexperienced. When used to produce a genial atmosphere its combined influences are readily observed, and in like manner a house where there is a damp stagnant air or dry parched feeling noticeable, shows the effects only too plainly of the sins of omission or commission. Like everything else it produces good or ill results according to the skill or carefulness of the operator.

As a means of assisting growth the common practice of syringing Vines when in a dormant state is familiar to all who have had anything to do with their cultivation, and years of close observation prompt me to state that this is more frequently overdone than otherwise. At the time when this process is first called into action—generally in winter, when the chilly dampness of the external atmosphere influences the internal air to a great extent, as but little fire heat is used at the commencement of forcing—it would be most unwise to syringe with the same freedom that might be quite harmless at a later period, when the days are longer and warmer. And yet this is done with the frequent result of tender attenuated growths that bear a larger crop of tendrils than bunches. Even where the practice is not carried to the same extent as this it is questionable if a still less use of the syringe than is sometimes advised would not be of advantage. It is a well known fact that waterings over the foliage are not conducive to floriferousness or fruitfulness, and as fruit is the principal object for which Vines are grown, any means which might be the cause of thwarting that object ought to be used with extreme caution. The trainings of infancy have a great effect on the actions of mature age, and in like manner the early treatment of the bud influences the latter growth and its attendant fruitfulness. Good crops of fruit are had from Vines that are syringed in their early stages, and in some instances the practice is followed up until the ripening period has commenced, with fairly satisfactory results. But is it not probable that the crops would have been still more satisfactory without the assistance of the syringe? In my opinion—which is expressed with great diffidence—the less a syringe is used directly on the Vine the better, unless an occasion may arise for its services. If the Vines are thoroughly ripened, and in other respects properly treated, there ought not to be much assistance required from the syringe to start them into growth. If an occasional damping, sufficient to keep up a moist searching temperature, is not enough to start growth, I would try to find out the cause before using the whip—I intended to write syringe, but the terms in the sense implied are somewhat analogous.

Damping, as applied here, is not merely throwing water along the path, but syringing the walls and other exposed surfaces as well. It appears to be like a case of "will he, nil he" to see a Vine syringed a regulation number of times in a day, or in fact any plant where the pruning has not extended beyond the current year's growth, but if a plant has been pruned hard into the old wood the assistance of the syringe carefully used is productive of the most beneficial results. In the latter instance the treatment is unnatural, and is only done in extreme cases when extreme remedies are in common request. A plant that has overgrown its limits, or from continual cutting has been rendered unsightly, is frequently transformed into a fairly good specimen by being cut back into wood several years old. When this is done the assistance of the syringe as an incentive to growth is generally recognised. But unless at such times as these the direct action of the syringe on the plants it is intended to benefit is not generally its best mode of doing so. It has been observed that this practice is only following Nature, and the rains and dews are quoted to prove the truth of the observation; but who amongst practical gardeners waters his Vine borders with a syringe? yet the rain has first to fall on the tree before it descends to the roots, and there is no necessity to argue the fact that the dew is more closely imitated by the ascending moisture from sprinklings than by directly syringing water on to the plant.

It has already been observed that waterings over the foliage are not conducive to floriferousness, therefore softwooded plants which are not subject to the attacks of insects are generally better without syringing, but those of a more hardwooded description, and foliage plants generally, are difficult to keep clear of insects without its use. But there are different ways of using a syringe, and to dew a house of plants with a spray nozzle is not the method which is most successful in keeping plants clean. It is generally the under side of the leaves and the stem of a plant where the insects commence their career, and to check their action or prevent their gaining foothold those parts must have its action applied to them with a force sufficient to effect that purpose.—M. D.

LETTUCES.

THIS summer I determined upon giving a good trial to several new and old varieties of Lettuces, to ascertain which were the best and most profitable, the latter point being a matter of importance to me, as indeed it is to most people nowadays. I sowed from seed received from New York, Sunset, New York, Big Boston, and Salamander, and from MM. Vilmorin, Blond Blockhead (what a name!), White Chavigny, and Trianon. Having thus put America and France under contribution, I turned to my native soil to provide me with Paris White Cos (which is French), All the Year Round, Sutton's Favourite, and Bath Cos. The latter are well known, and were simply grown to test the other varieties. I had forgotten Daniels' Buttercup, which, being the only new English variety, I will describe at once as a compact growing yellow Cabbage Lettuce, which hearts readily and is of good quality, but wants using at once, for the leaves being very soft they easily bruise, and the appearance is then spoilt. Sunset, a curled Cabbage variety, I found very good, but not extra good, and having found better I shall not grow it again, although it is better than many. New York is an exceedingly large Cabbage, of dark green colour, crisped and curled somewhat, hearting quickly, and when well grown will save much trouble in pulling, for one will easily take the place of four ordinary Lettuces. The quality is good. Being so large and solid it sells readily for a good price, which is another important point. Big Boston runs to seed in a hurry, and I never want to see it again.

Salamander is very similar to White Chavigny. It is a smooth leaved Cabbage, not running to seed but forming white hearts, the plants being compact and uniform in growth. This description will also cover White Chavigny, and if you grow one you will not require the other, for there is nothing to choose between them. Blond Blockhead, a fringed and crisped Cabbage variety, is a real beauty, and to my idea the best Lettuce I ever saw. The plants in a young state are green, but when the large round hearts—not flat round, but globular—are formed, they turn a delicate pale yellow, and are beautiful to the eye, and I may add to the palate also. It does not run to seed readily, but stands drought very well. Trianon is a Paris White variety, and is excellent. I grew it to a large size, and found it good in all respects. Sutton's White Heart, which I grew two years ago, I shall in future join with Trianon for Cos, and Blond Blockhead with New York for Cabbage varieties. These four varieties will supply me with all I want during the summer. Had I not unfortunately put out several hundreds of Big Boston, which all ran to seed, I should have been very pleased with my Lettuces this year. Where space cannot easily be spared, I find planting a row between the rows of newly planted Strawberries a good plan, and they invariably do better there than elsewhere, and being soon off the ground they do not affect the Strawberry plants injuriously.—H. S. EASTY.

SARRACENIAS.

As a grower and exhibitor of these beautiful and most interesting class of plants, I should like, with your permission, to supplement the article of "K." in your Journal recently. I consider that watering and the annual repotting are the most important matters in their cultivation. I say annual, because as far as my experience goes, these plants cannot be kept in vigour if this is not done, and what I mean by the annual potting is shaking the roots out of the potting material and using fresh. As a rule this is done in the spring of the year, but it may be done any time, the roots being so pliable they are not, with ordinary care, readily injured. Plants are broken up at any time here when necessary for propagation, and the plants continue growing as if they had not been disturbed.

Water is freely used amongst them here; in fact, when potted in the material recommended by "K.," watering cannot be overdone. We deluge with water every day when the plants are growing, as dryness is fatal to the development of the pitchers. Water is given freely three times a week in winter when not growing.

As to varieties, your correspondent, "K.," mentions several that I have discarded, because superseded by better. *S. variolaris* gives way to that beautiful Lancashire hybrid *S. Wrigleyana*, the pitchers of similar shape, but larger, and the marking much brighter; and so does *S. psittacina* to that charming sort, *S. Courti*, the handsomest and most highly coloured amongst the dwarf growing varieties.

S. rubra is recommended by "K." for the fragrance of its flowers, but its pitchers are too small to be interesting; they are also wanting in colour.

The varieties below mentioned ought to be in every collection, because of the immense size and beautiful markings of their pitchers. *S. Williamsi*, pitchers 15 inches high, of a light green colour, with wide spreading mouth, ornamented by a lid 5 inches in width, with gold and crimson venation, a very handsome variety. *S. Flambeau*, a very highly coloured variety, the upper part of the pitchers of an intense crimson, with darker reticulation, the lid partially turned over the mouth; its height is about 15 inches. *S. Maddasoni*, of similar size and shape to the preceding, with green pitchers, and beautifully veined with crimson. *S. Tolliana*, pitchers green, with large open mouth, and correspondingly large lid, crimson and gold markings, height about 18 inches. *S. Stevensi*, another very handsome variety, pitchers about 20 to 24 inches, dark shining green, and heavily marked, with crimson venation, narrower at the mouth, has a large wide spreading lid, also beautifully marked. *S. Fildesi*.—This is unquestionably the largest and handsomest of the tall growing sorts, pitchers 20 to 30 inches high, of a light green, and richly marked with crimson, very wide mouthed pitcher, the lid of which I have measured 6 inches across. —A. J. A. BRUCE, *The Nurseries, Chorlton-cum-Hardy, Manchester*.



IMPORTED ORCHIDS.

THIS subject is one which is not thoroughly understood by all gardeners, though it is of the greatest importance to everyone interested in Orchid culture, and it is, moreover, a subject upon which very little has been written. Probably a few remarks may therefore be useful to some readers of the Journal.

It has often been asked, What becomes of all the Orchids that are annually imported to this country? Many thousands of plants from various parts of the world find their way into the English market from the numerous collectors employed by the leading nurserymen, such as Messrs. Veitch, Bull, Williams, Hugh Low and Co., Sander & Co., St. Albans, and many others, besides private gentlemen and others. Then it is again asked, What becomes of all these? The question has been answered by many, and by all in the same way—namely, that more Orchids are killed than are grown. Before Orchids were so well understood as they are at present thousands of valuable plants were killed owing to the collectors not furnishing the growers with sufficient information with regard to the temperature, climate, and altitude where the plants were found growing in their native habitats. If they came from the tropics it was thought they all required the same treatment, but experience has proved this to be a fallacy.

The trade that is known as Orchid-importing is rather a critical one, subject to great fluctuations and disappointments. It is very disheartening to both employer and collector, when a very valuable importation of Orchids has been received, to find on opening the cases that there is scarcely one living plant. The condition in which Orchids are received depends in a great measure on the time in which they are collected. This may be considered the most important point, for if the plants have abundant young growths the chances are against their arriving in this country safely. The best time for sending the majority of Orchids to England is when the season's growth is completed, and they have been subject to a certain amount of drying or ripening; but no rigid rule can be laid down for the guidance of collectors; much depends upon their own skill and judgment. Packing is another very important matter, for if Orchids are not well and securely packed they present a miserable appearance when taken from the cases. Each collector has his particular style of packing plants, as certain genera require to be packed quite differently from others. I need not go into details with regard to packing, for there is so much to be said in connection with it that a whole chapter may be written on it.

When Orchids are newly imported they present at the best of

times a rather sickly appearance; but with a little kind treatment they soon revive provided there is sufficient life and vigour in them to make fresh growth. Many are under the impression that when Orchids are newly imported all that they require is to be potted, placed in a high temperature, and given plenty of water to "freshen" them up; but it may be here remarked that nothing proves more fatal than such treatment. When the plants are received they should be thoroughly examined, taking care to remove any loose or decayed matter they may have about them. Of course different genera require different treatment, and I will take some of the principal that are of most importance to horticulturists, and give a few particulars respecting each.

AERIDES.—These are all epiphytes, and may be grown in either pots or baskets, baskets being preferable for many species. The present genus includes several very showy species, of which the following will be fair samples:—*A. crispum*, *A. Fieldingi*, *A. japonicum*, *A. odoratum*, and *A. quinquevulnerum*. They are always imported in dry boxes or cases. If the plants arrive in the best possible condition they have a slightly shrivelled appearance. Much depends on the time they have been coming. They should immediately be spread out thinly in a cool stove for a short time, placing them so that the foliage will not come in contact with any wet material. They should remain in this position for a few days until the foliage is becoming a little plump. Little or no water will be required on their roots or leaves, as the plants will take up sufficient from the atmosphere. Shade is essential to all newly imported plants. After the plants have plumped a little they may then be potted, using only broken potsherds and sphagnum. After they have commenced growing a top-dressing of sphagnum will be beneficial, watering them rather sparingly till they commence rooting.

ANGRÆCUM.—*Angræcums* of the *A. eburneum* type are rather difficult to import, for they generally lose a large number of their lower leaves. I find it a good plan to hang them up for a time to enable the leaves that remain to become firmer in texture, after which the plants may be placed in potsherds and sphagnum, watering rather sparingly till they begin to form fresh roots. *A. eburneum* and *A. sesquipedale* are the two most showy species, but there are several others that are extremely pretty and well worth growing.—L. C.

(To be continued.)

GREEN-LEAVED DRACÆNAS.

IN those establishments where indoor decorations are carried out on a fairly extensive scale, green-leaved *Dracænas* take a prominent part in the display. Excepting perhaps the Indianrubber plant (*Ficus elastica*) *Aspidistra lurida variegata*, and a few Palms, no other plants that are used for this purpose withstand the rather rough usage better than the green-leaved *Dracænas*. They have also a very ornamental effect, and few plants look more graceful on the dinner-table than either well-grown plants of *D. gracilis* or *D. congesta*. *Dracæna rubra* may also be used for the same purpose, and with some people is a great favourite. For effect in the conservatory, what is more elegant than a well-grown specimen of *D. indivisa* Veitchi? *D. cannaefolia*, as its name implies, has some resemblance to the well-known *Canna*, although the style of growth is typical of a *Dracæna*. Either of the plants named may be grown in a cool conservatory or cool fernery, although whilst in a small state we grow them in an intermediate temperature to force them into size. Unlike other *Dracænas* the plants will retain their foliage for a lengthened period in comparatively small pots for the size of the plants. I kept a plant of *D. gracilis* in a rather dark part of a sitting room for upwards of nine months without the loss of a single leaf, much less colour, so this is evidence of the good qualities of the above named plants. When kept in a sitting room for a lengthened period watering must be carefully attended to, and the foliage sponged occasionally to keep it from dust, which injures plants as much as anything.

Although the propagation is somewhat different from that generally practised for the higher coloured varieties, there need not be the least difficulty on this point. *D. rubra* and *D. congesta* are propagated from the roots, or rather underground stems. To secure these the plants should be turned out of the pots, when the underground stems should be removed with a sharp knife. These could be cut up into lengths, and inserted singly in small pots or placed in fibre in a propagating frame, where growth will soon take place. In our own case we have several planted out in large baskets, when the underground stems push out all around. These are cut off when about 2 inches in length, and inserted in small pots. We have numbers which were taken off in the spring, and are now useful plants in 48-sized pots.

We have not the least difficulty in keeping up a good stock of *D. gracilis*. The tops taken off tall plants root readily if

inserted firmly in sandy soil in small pots, and these placed in a propagating frame. The old shoots are placed on a shelf in a stove, when the dormant eyes soon start into growth. These soon form useful cuttings, when they are taken off with a heel, and inserted like the tops firmly in small pots, and from these when well rooted into 48's. Equal parts of turfy loam and peat, with the addition of silver sand and charcoal, form a suitable compost. Vigorous syringing for young growing stock is very beneficial in keeping the foliage free from either red spider or thrips, which soon disfigure the plants when allowed to gain a footing.—A. YOUNG.

LILY OF THE VALLEY.

It is somewhat surprising how little trouble is taken in the cultivation of this ever-popular plant, for though it would be a hopeless search trying to find a garden without it, just as every garden has its spot sacred to the Violet and the Rose, yet in how many gardens can it be said that due attention is paid to its wants? The bed or clump of Lily of the Valley may be likened to the brook of the poet—it goes on for ever. A change of garden government may see the overhauling of many things, but as a rule the most extreme reforms stop short at the spindly and antiquated plants, which do their very best to pay a quota of sweet-smelling sprays for the space they are allowed to occupy. This is not as it should be. Nothing pays better than improving Lily of the Valley by good cultivation. In comparison with most cultivated plants the labour involved is very small indeed, and the results, though not of a sensational nature, are nevertheless somewhat extraordinary. I presume most people are acquainted with the ordinary garden variety which produces, according to the want of care it has to submit to, spikes with from thirteen to fourteen down to five or six bells of small dimensions. Under a course of common-sense culture this common variety may be induced to furnish spikes with an average of twenty large bells, and occasionally with as many as twenty-four to twenty-five, and in one instance I have gathered a spike with twenty-seven expanded and unopened buds. As a rule nothing gives greater satisfaction than good quantities of common flowers, and if these are of a quality better than the ordinary run it gives great pleasure to the owner or his family to distribute them to friends. In this way Lily of the Valley pays well, but if it should occur that the inevitable "surplus" is required to find its way to market, then it will be found that good flowers will be easily disposed of at sometimes double the price of ordinary produce, while poor qualities will not sell at any price. Those unacquainted with this phase of the question will hardly credit the difference in prices betwixt good and poor qualities, especially when there is a good supply of any article. A salesman told the writer the other day he had just disposed of flowers of the same kind, but of varying qualities, at from 1d. to 4s. per dozen.

About the treatment necessary to secure Lily of the Valley of the best quality, it may at once be stated that there is very little in it. As generally grown Lily of the Valley is treated to the same contemptuous care as is accorded to Horseradish—that is to say, the dead leaves are raked off before winter, and the bed then left severely alone. It is one of the plainest axioms of good gardening that plants must be fed, and that the foliage must be allowed a free development, and in most cases the buds thinned out. It thus follows that an occasional change of ground may be advantageous, and that in any case the plants should be treated to periodical dressings of manure, and never be allowed to become too thick for the full development of the foliage. The present is a good time to replant. A thick dressing of cow manure should be dug-in and the plants put out in small clumps of four or five heads each in lines a foot apart, and about 6 to 9 inches from each clump. A surfacing of manure is of value spread thinly over the beds when the work is finished. If the plants are weakly they may be left without further attention save keeping free from weeds for the first year; but when the beds are in good cropping condition, beside the winter dressing of soil or cow manure, it will be found of the greatest benefit to spread a good coating of slag phosphate, of superphosphate, or of some good proprietary mixture between the lines during spring. The best time is when the buds are seen to be on the move. The quality of the spikes will be much improved, while the foliage will be much larger than if left undressed, the next season's crop, as a matter of course, benefiting to the full in increased length of spike and size of the individual bells. As to the length of time a bed should be allowed without breaking up and replanting, I do not think over five years should be allowed to pass. A portion should, of course, be done every year or second year, and thus a continued supply of fine-quality spikes will be secured, unless spring frosts should damage the crop. I have found a drenching of water in early May when the weather happened to be hot and dry do much good to the plants. When

the spikes are wanted extra fine, sashes placed over the beds and quite close to the foliage, with sides and ends open, secure them of the utmost purity.

As to the best variety, I grow a quantity of the true Berlin beside the common garden variety, and while the former yields finer bells and shorter though more equal spikes, it is much less prolific than the other, which produces a much greater number of spikes from a given piece of ground.—B.

PIPTANTHUS NEPALENSIS.

THE Evergreen Laburnum is the popular name which has been not inaptly applied to this rare and little-known Indian shrub; but though it bears some resemblance to one of our most common and beautiful flowering trees, yet it can be easily distinguished from it at a glance by



FIG. 53.—PIPTANTHUS NEPALENSIS.

the most casual observer, and attractive though it be it cannot rival its more floriferous relative in effectiveness. Still it is one of those numerous old inhabitants of our gardens that deserve to be rescued from the obscurity and neglect into which they have fallen owing to the continued and extended introduction of novelties.

It is of branching habit, but not bushy, and seems to need support of some kind, as it has a rather straggling appearance. Trained to a wall it succeeds well, and is very pretty during May and early June, as it flowers abundantly when in good condition. In a few establishments it may be occasionally seen, but it is far from being common. It is quite hardy in most parts of England. It needs the protection of a wall in the northern or colder districts; but in the south it is rarely injured, even if planted in the open.

The name given above is the one by which it is best known, but it has several synonyms, *Baptisia nepalensis* being one that is occasionally seen, and more rarely *Thermopsis nepalensis* and *T. laburnifolia*.

CANNAS.—In favoured localities, and in dry sheltered positions, many of these will survive in the open, or where they are well established, but they require to have a good bank of ashes over them. As a rule the

safest course is to lift and treat very much as advised in the case of Dahlias. They keep exceptionally well on the floors of fairly light freely ventilated cellars, but commence growing again far too early if stored in close warm cellars. If packed closely together under greenhouse stages, as they often are, some method of warding off drip from pot plants above must be adopted, or otherwise either decay or premature growth will be the result.

GRAPE GROWING AND GRAPE KEEPING.

A FEW words on the above subject at this season may not be out of place, and the method I am about to advocate may interest some of your readers, especially young gardeners who have lately taken on themselves the responsibility of a head place. I will commence with Vines which have been cleared of their fruit, and are intended to be started about the new year. These should have then had their shoots shortened as soon as the Grapes were cut, and this shortening should be continued at intervals up to the time the Vines receive their final pruning, by which means the eyes are strengthened and larger bunches secured. A good watering is also advisable at this period. Keep the Vines syringed daily, and should they be infested with insects syringe with the following in the evenings, washing the dead insects off in the morning:—Place 1 lb. black soap in a wooden, earthen, or tin vessel, add sufficient water to dissolve it; add 1 pint petroleum; mix all together, and when in a thick liquid add sufficient water to make 6 gallons.

The next point is the final pruning. Now no one cares to see long ugly spurs; but where Grapes are the principal object I advise that three, or even four, eyes be left, especially on old Vines. This gives choice of selection when the Vines are well started. Pruning completed, all cuts should be cemented in case of bleeding. This being done, commence removing the loose bark, not scraping the Vines, as is sometimes done, except in the case of insects; then it is necessary. Also the canes should be washed with the solution before mentioned, and dressed with a mixture of cow manure, soap, clay, sulphur, and petroleum, the house being washed previously. The rods may be tied in their proper places, except the Vines are young; then it would be necessary to tie them down to insure an even break. Commence now, and take all exhausted soil or manure off the border down to the roots, for if the borders have been properly treated roots will be near the surface, and if not the only way to bring them up is to supply a fresh soil, which ought to consist of fibrous loam, shells or bones, soot, and some lime—that is, if the soil does not contain sufficient. The border may be dressed with 3 inches depth of this, and it will then require a good dressing of cow manure, after which a thorough watering is essential. A little soil thrown over the manure gives the house a cleaner appearance.

We will suppose the new year has arrived. Commence by closing the house at night for the first week, in the second week close earlier still, in the third week about midday, and the following week introduce some long litter and leaves, which will maintain the temperature at from 40° to 60° by night, according to the weather. Ventilate by day very carefully from that time onwards, avoiding cutting winds or sudden falls of temperature. Close about 1 P.M., as by so doing in fine weather the temperature will rise to about 65°. When the fermenting material is nearly exhausted fire heat must be resorted to, the temperature requiring to be gradually raised, so that by the time the leaves are expanding it should not be below 58° at night and 65° by day. Admit air at 68°, allowing it to rise 75° to 80° by sun heat, and when the Vines are in bloom it will stand by night at 65°, by day at 72°. Admit a little air as early as possible. In mild weather run the temperature up to 85° or higher. Tap the bunches several times throughout the day, and give a good watering previous to flowering. Thin as soon as possible, and when the berries are stoning keep the temperature steady and the atmosphere drier, which will necessitate less fire heat. I never employ front ventilation until after the fruit is ripe. Still, I do not protest against others doing so; but think the method I adopt is the best. When the berries are colouring give another supply of water, also using Thomson's Vine or other manure, adding a good quantity of soot, which not only assists the colouring, but is also of great service to the foliage. Sometimes shanking is caused by too much water. I find that three thorough waterings, except surface waterings, are sufficient from the time the Vines are started until the Grapes are ripe; but supposing the borders were loose or shallow the above waterings would not suffice. Before entering on Grape keeping I must state that a Muscat of Alexandria house when in bloom should have a night temperature of 68° to 70°, day 70° to 75°, running up if possible by sun heat to 90°. Provided the canes are healthy the bunches will set as free as any other variety.

When the Grapes are finished, fire heat can be dispensed with in

the house started at the beginning of the year; but late houses will require some at times to prevent the berries damping, and the temperature must be kept as steady as possible. Many seasons Grapes can be kept better in a fruit room than on the Vines. A proper fruit room is so situated that the sun cannot strike on it after it is required for fruit, pipes being placed in it to supply heat if required and keep it airy; 45° to 50° is a good temperature to maintain. Ventilators should be opened at intervals, having a suitable heat at the same time in the pipes to avoid damp. I have known the late Mr. Tillyard, late gardener to the Earl of Yarborough, under whom I served as foreman, keep Black Hamburgs fresh in the fruit room from the month of October till March. Bottles filled with water and a little charcoal placed therein should be arranged ready. Cut the bunches with sufficient length of shoot to reach well into the water. A strict watch must be kept for berries damping, for one berry will soon ruin a whole bunch.

There are many points in Grape growing I have not touched upon; but what I have written I practise, and if any unsuccessful Grape grower will carefully follow what I have written he will find the results satisfactory.—S. SCOTT, *Belfast*.



EVENTS OF THE WEEK.—The Chrysanthemum shows are the special cause of horticultural activity just now, the present and succeeding week being remarkably busy ones for all concerned with exhibitions. To-day (Thursday) the Portsmouth Show continues, closing on Friday. There are also shows at Putney, Chiswick, Pembroke, Taunton, Stroud, Isle of Sheppey, Ascot, and Tottenham. On Friday, November 7th, the annual Show will be held at the Crystal Palace, Sydenham, which is expected to be of unusual interest, and there will also be a show at Exeter on the same day. On Monday, November 10th, the St. Neots' Society (Hunts), have their annual exhibition, one of the few held on that day. Tuesday, November 11th, is the opening day of the National Society's Show at the Royal Aquarium, Westminster, particulars of which are given in another paragraph. The Royal Horticultural Society's Fruit, Floral, and Orchid Committees meet on the same day at the Drill Hall, James Street, at twelve noon. The Kingston Show will also open on Tuesday, as well as Brighton, Lewes, Eastbourne, and Truro, all of which are two-day shows. Wednesday, November 12th, is another busy day, for besides those continued from Tuesday, shows will be held at Bournemouth, Croydon, Northampton, Tunbridge Wells, Birmingham, and Hampstead.

— THE WEATHER around London has been variable. Two or three days were extremely mild with continuous rains, but brighter weather has followed, though not cold for the time of year. The leaves are hanging late on many trees, but the first severe frost brought down all on the Mulberries, the Catalpas, and other tender trees.

— CHRYSANTHEMUM SHOWS.—We shall be obliged if secretaries or friends who favour us with reports of shows at which our representatives are unable to attend, will give the names of varieties in first prize stands in the chief open classes. We much prefer even very short accounts of shows written by officials or gardeners to lengthy newspaper reports, which can seldom be used. The co-operation that may be accorded in this matter will be much appreciated by the Editor.

— GARDENERS' ORPHAN FUND.—At a meeting of the Committee, held on Friday night last, it was decided to call a special general meeting of subscribers with the object of making a slight alteration in the rules, so that the financial year shall terminate at the end of December instead of at the end of June, for the convenience of subscribers and in the interests of the Fund. The meeting is to be held at the Cannon Street Hotel, London, at six o'clock P.M. on December 9th. It was also decided to close the Deal Memorial Fund on the 22nd inst. The response has been very good, but the Committee are anxious to raise a few more pounds for completing the sum they wish to raise for worthily

perpetuating the memory of an excellent man by placing a number of children on the list of beneficiaries. Any small amounts that can be sent to Mr. A. F. Barron, Royal Horticultural Society's Gardens, Chiswick, for that good purpose will be thankfully acknowledged. Five shillings collected in fifty different gardens would fittingly close the Memorial Fund.

— **CROYDON CHRYSANTHEMUM SOCIETY.**—The Committee of this Society have arranged to have a stall for the sale of flowers and fruit in connection with their annual Show at the Skating Rink, Park Lane, Croydon, on Wednesday and Thursday, the 12th and 13th inst. The proceeds will be given to the Gardeners' Orphan Fund. Contributions of flowers, &c., will be gladly received by the local Secretary, Mr. G. W. Cummins, or Mr. W. Beckett, Secretary to the Society, at the Skating Rink, Park Lane, Croydon.

— **PORTSMOUTH CHRYSANTHEMUM SHOW.**—At the great Show held at Portsmouth yesterday, the awards in the twenty-five guinea challenge cup class were as follows:—First (£8) and cup holders, Messrs. W. & G. Drover; second (£7), Mr. N. Molyneux, gardener to C. Garnier, Esq.; third (£5), Mr. Penford, gardener to Sir D. Fitzwygram, Bart.; fourth (£3), Mr. Payne, gardener to Mrs. Smith. The cup is offered for forty-eight blooms, half incurved, and half Japanese, in not less than thirty-six varieties, and has to be won twice to become the property of the exhibitor. It was secured last year by Mr. W. G. Drover after two consecutive wins. The Jubilee prize of £10 for eight trained plants was won by Mr. J. Bushby, gardener to Captain Long.

— **THE WILLIAM HOLMES' MEMORIAL FUND.**—A circular is now being issued respecting the above to this effect—"At a public meeting at the Royal Aquarium, Westminster, on October 15th, 1890, it was unanimously resolved to commemorate the valuable services of the late Mr. William Holmes, the deeply respected Honorary Secretary of the National Chrysanthemum Society, by raising a fund for that purpose, to be termed 'The Williams Holmes' Memorial Fund.' The Committee appointed to carry out this object has carefully considered the numerous suggestions offered, and the following mode of applying the fund has been adopted. 'That a portion of the fund raised be set aside for assisting the technical education in landscape gardening of the late Mr. W. Holmes' eldest son, and that the remainder be awarded as prizes or medals at the exhibitions of the National Chrysanthemum Society and at those of affiliated societies.' Subscriptions and all communications should be forwarded to the Honorary Secretary, Mr. Lewis Castle, Hotham House, Merton, Surrey, from whom collecting cards can be had on application."

— A **SUNDERLAND** correspondent writes respecting the **SEASON IN THE NORTH** as follows:—"It has been a bad and busy season, and it is some years since I had so much labour for such scant return. The garden crops are very good, but the labour to keep all clean and healthy has been enormous. You will say it is just the old story of shorthandedness. This is just it. In a fine season we do very well, but a wet season flounders us. All was nothing to hay-making. I never before ran the risk of cutting all down at one time until this year, and it rained every day for over a week. You may guess the result."

— "We have had a splendid crop of **APPLES** this season, some varieties exceptionally so. Of course Lord Suffield took the lead, as it always does, but we had also good crops of Warner's King, Cox's Pomona, Keswick Codlin, New Hawthornden. One Apple I weighed, 13½ ozs., not so large as the Peasgood's Nonesuch from Mr. Barlow, still it was not a bad production for us northern growers. Strawberries were plentiful, but the wet season spoilt a quantity of fruit. I think Waterloo will be a reliable sort for this district, or rather for this garden, as I think we have almost the most unfavourable spot in it."

— "I THINK it has been the most successful **PEA SEASON** I ever had in my experience. The growing season would have a good deal to do with that, but I think the varieties had quite as much. I had part of my seeds from Messrs. Veitch of Chelsea this season, and I had some varieties I have not had before. Whatever it was, the supply was marvellous. I tried a few new varieties of early sorts, but for here Backhouse's Selected William I. still leads the way, and we gathered Sturdy the last week in October, and shall get some more. Speaking of Chrysanthemums, I may say that I have not had such a show for bloom since 1887. They are all housed, and the conservatory is full at present of the Desgranges family and some others. The later sorts are all well budded, and look well for bloom. Of course I do not grow from one

to three blooms upon a plant as is done for exhibition, but as many dozens for conservatory show. What splendid weather we are having at present; dry and fine! It is as well so, as we have a heavy fall of timber here, and we are busy at present. There were 1100 trees marked; not a bad fall for our few acres."

— **THE total RAINFALL AT CUCKFIELD, Sussex, for October** was 1.51, being 2.44 inches below the average. The heaviest fall was 0.36 inch on the 7th. Rain fell on ten days. Highest temperature 61° on 4th, lowest 24° on 28th. Mean maximum 55.2, mean minimum 40.2. Mean temperature, 47.7°. Partial shade readings, 4° above the average. Remarkably fine month; nothing injured by frost till the 28th; up till then flower beds as gay as at midsummer.—R. I.

— **COLLECTIONS** or groups of **TREE AND SHRUB SPECIMENS** are too seldom seen at horticultural meetings or shows, and this rendered the contribution from Messrs. William Paul & Son of Waltham Cross, at the recent meeting of the Royal Horticultural Society, all the more valuable. It comprised a general selection of the most effective hardy shrubs and trees, among the former being *Berberis Thunbergi*, the leaves of which turn a bright reddish colour before falling. A certificate was awarded for this plant and a medal for the group.

— **CHISWICK GARDENERS' ASSOCIATION.**—The third annual concert in aid of the Gardeners' Orphan Fund took place at the Vestry Hall, Chiswick, on October 29th. It was most successful, the Hall being crowded. Mr. George Cannon, manager of Messrs. C. Lee & Son's nurseries, Ealing, sang well, and his daughter, Miss Louisa M. Cannon, a silver medalist of the Royal Academy of Music, ably presided at the piano. The platform of the Hall was tastefully decorated with foliage and flowering plants sent by Mr. M. T. May, gardener to the Marquis of Bute, Chiswick House. The Committee, with their Chairman and Secretary, deserve much credit for the excellent results of their praiseworthy efforts.

— **MR. C. ORCHARD**, Bembridge Hotel, Bembridge, writes concerning the **CHRYSANTHEMUMS AND THE WEATHER IN THE ISLE OF WIGHT**. "The Chrysanthemums in the Isle of Wight are looking very well indeed. Mr. Wilkins, gardener, The Castle, St. Helens, has some good ones, more especially the incurved blooms. The Ryde Show is next week, and I think we shall see some good blooms and plants. Volunteer, I think, will make a good show; Japanese, with long spreading florets, white suffused with pink. Mrs. J. Wright I have seen good, especially in cut-down plants; in fact my system is gaining more in favour of cultivators than ever, and the examples I have in my front hall have quite startled some who have been prejudiced against it. The sharp frost on Sunday night (October 26th) cut up all the tender plants, and spoilt all the *Sœur Melanie* blooms out of doors, but Madame Desgranges it did not hurt so much. They do well on our reclaimed land."

— **READING AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.**—The second autumn meeting of this Association was held at the usual place on Monday evening, when a large number of gardeners assembled to hear a paper on "Pears" by Mr. T. Bowie, the able gardener at Sutherlands, Reading. Mr. Wm. Lees occupied the chair. Mr. Bowie dealt with the subject in a very concise and practical manner. His remarks on the root culture of Pears were warmly applauded, and in dealing with varieties he considered twenty-four necessary to obtain a supply of Pears over the longest possible period. Mr. Bowie exhibited fifty varieties of Pears, an admirable collection. There were also several other collections. Mr. J. Woolford exhibited thirty varieties, Mr. C. Durman sixteen varieties, and Mr. Pound, senr., and the Honorary Secretary showed some good examples of the leading varieties—altogether a fine display, which added greatly to the interest of the evening. A discussion as to stocks, soils, &c., was well sustained by the members, and there is no doubt that much practical good will result.

— **STOVE ARALIAS.**—Those gardeners who have to keep up a supply of table plants know how useful a batch of Aralias are, as these are generally favourites for the embellishment of the dinner table, especially such varieties as *A. Veitchi* and *A. Veitchi gracillima*, as the growth is so elegant and not likely to cause an obstruction. To keep up a supply the nurserymen are usually resorted to, as with their special contrivances they have not much difficulty in keeping up a stock of saleable plants. Grafting is the usual mode of procedure for the increase of plants, the stock being *A. reticulata*, but they may also be propagated

from cuttings. *A. filicifolia*, as its name implies, has very Fern-like foliage and is easily increased by cuttings. In this manner a stock of useful plants are easily kept up. *A. Chabrieri* may also be increased by the same means. This makes a very handsome specimen if kept potted on. When allowed to become root-bound the under branches do not develop properly. All the species named above luxuriate in a stove temperature, and soon grow into useful plants. Vigorous syringing through the summer months will keep the plants clean; if this is not attended to the plants may fall a prey to soft scale and mealy bug, especially on the young growing points. Tall plants when kept repotted have a capital appearance for standing in rooms.—
A. YOUNG.

— SPECIAL PRIZES FOR BORDER CARNATIONS.—It will be remembered that Martin R. Smith, Esq., offered at the Carnation Conference, held at Chiswick in July last, special prizes for border Carnations grown wholly in the open air. Mr. Smith has now issued regulations for awarding these prizes, and the sum of £21 is offered in three classes, £7 being given in four prizes in each class as follows:—Class 1.—For the best border variety of self-coloured Carnation, not less than twelve blooms, to be shown in bunch or bouquet, with its own foliage and buds. Class 2.—For the best collection of twelve varieties of self-coloured border Carnations, not less than six blooms of each variety. Class 3.—For the best collection of eighteen varieties of flake, lizarre, or fancy Carnations or Picotees, not less than six blooms of each variety. In these two foregoing classes the flowers are also to be shown in bunches or bouquets, with their own foliage and buds. Each exhibitor will be called upon to sign the following declaration:—"I certify that all blooms shown by me for the prizes offered by Mr. Martin Smith have been cut from plants which have been wintered without protection in the open garden, and that they have been grown without bands or ties round the calyx; that they are staged without dressing, and exactly as they are cut from the plants." The stems in all cases are not to be less than 9 inches in length. The blooms to be staged in bottles, tins, or glasses, and not in the usual way in boxes. No bands or ties are permitted round the calyx, nor are paper collars or wire supports to be employed. A burst calyx will disqualify. Non-compliance with the above regulations will disqualify the exhibitor.

— NATIONAL AURICULA AND NATIONAL CARNATION SOCIETIES (SOUTHERN SECTION).—The annual meeting of the members of these Societies took place at the Hotel Windsor, Victoria Street, by the kind permission of the Horticultural Club, on the 28th ult., the Rev. H. H. D'Ombraín presiding. The reports of the Committees of the two Societies were read by Mr. Douglas. That of the former declared there was no lack of interest in the cultivation of the Auricula, and though the early months of the year were characterised by weather of an ungenial nature, a large number of plants of Show varieties were staged, generally of good character. The Alpine varieties were never before finer and more numerous. The Fancy Polyanthuses and Primroses were also very fine and attractive. In reference to the Carnation, the report set forth that the interest in this flower materially increased during the year, as was shown by the Exhibition and Conference held at the Chiswick Gardens, both of which were well attended; and so numerous and fine were the Show varieties, that it proved the best Exhibition held by the Society. The yellow grounds, the selfs, and Fancies, were shown in the very best character. The Treasurer's balance-sheet of the Auricula Society showed an income of £83 11s. 3d., and an expenditure of £72 3s. 3d., including £61 12s. 6d. paid away in prize money, leaving a balance of £11 8s. in the hands of the Treasurer. It was also stated that ten new members had been added during the year. The balance-sheet of the National Carnation Society showed receipts £77 4s. 11d. and disbursements £67 10s. 9d., a balance of £9 14s. 2d. being carried forward for next year. The reports and financial statements were unanimously adopted. The Presidents, Vice-Presidents, and members of the Committee were re-elected, with the exception of Mr. J. James, deceased. The name of Mr. Martin R. Smith was added to the Vice-Presidents. The schedules of prizes were then revised. In the case of that of the Auricula Exhibition, the amounts of the prizes for six, three, and one specimen gold-laced Polyanthuses were reduced, and a first prize of 20s. apportioned to each of the classes for Fancy Polyanthuses and Primroses. The schedule of the Carnation Society was passed unaltered. Mr. Douglas reported that the Council of the Royal Horticultural Society would contribute the same sum as last year towards the prize list of the two Societies. The dates of the two Shows will, as usual, be on meeting days of the Royal Horticultural Society; the Auricula Show at the Drill Hall on April 21st, and the

Carnation and Picotee Show on July 21st, also at the Drill Hall. The meeting closed with the usual vote of thanks to the Chairman.

CHRYSANTHEMUM SOCIETIES AND SHOWS.

THE following list has been prepared at the request of numerous correspondents, who have supplied us with the particulars here given, and it will, no doubt, be found useful by many who are concerned with exhibitions during November. The name of the society, date of show, with the Secretary's name and address are given in that order.

- Ascot, Sunninghill, Sunningdale, and District, Nov. 6th and 7th; F. T. Patton, The Links, Ascot
 Banbury, 19th Nov.; H. F. Bennett, 46, High Street, Banbury
 Bath, November 12th and 13th; B. Pearson, 14, Neilson Street
 Batley and District, Nov. 22nd; John T. Booth, Batley
 Bedford, Nov. 19th and 20th; J. Sanders Clarke, 49, Linden Road
 Bedford and Bedfordshire Chrysanthemum Society, Nov. 19th and 20th; Oliver C. Coombs, 28, Mill Street, Bedford
 Birmingham and Midland Counties, Nov. 12th and 13th; J. Hughes, Northwood Villas, Metchley Lane, Harborne, Birmingham
 Borough of Croydon, Nov. 11th and 12th; Wm. B. Beckett, 272, Portland Road, South Norwood, S.E.
 Bournemouth, Nov. 12th and 13th; Charles Brown Carnarvon, Cavendish Road
 Bradford and District, Nov. 7th and 8th; George Taylor, 102, Godwin Street, Bradford
 Brighton, Nov. 11th and 12th; Mark Longhurst, 18, Church Road, Hove
 Bristol, Nov. 13th and 14th; F. Wilford Jones, Hill Avenue, Totterdown, Bristol
 Cardiff and District, Nov. 18th and 19th; C. R. Waldron, 96, St. Mary Street, Cardiff
 Chelmsford, Nov. 12th and 13th; P. Edwards, 100 High Street
 Cheshunt, Nov. 14th and 15th; R. Archer, Hatton Road
 Chorley, Nov. 21st and 22nd; James Sargeant, 64, Market Street, Chorley
 Cornwall Royal Polytechnic, Nov. 12th, 13th and 14th; John P. Cregoe, 7, Tehidy Terrace, Falmouth
 Cranbrook and Weald of Kent, Nov. 13th and 14th; Albert Baker, The Hill, Cranbrook, Kent
 Crediton, Nov. 13th; G. Lock, Belle Parade Cottage, Crediton
 Croydon, Nov. 11th and 12th; W. Beckett, 272, Portland Road, South Norwood, S.E.
 Crystal Palace, Nov. 7th and 8th; W. G. Head
 Dawlish, Nov. 13th; H. L. Friend, 3, Priory Terrace, Dawlish
 Derby, Nov. 14th and 15th; G. Sutherland, Arborctum Square
 Devon and Exeter, November 7th; G. D. Cann, 16, Queen Street, Exeter
 Diss (Norfolk), Nov. 18th; Rev. F. Page Roberts, Scole Rectory
 Eastbourne, Nov. 11th and 12th; C. H. Simmons, Endlewick, Eastbourne
 Eccles, Patrieroff, and Pendleton, Nov. 14th and 15th; H. Huber, 183, Worsley Road, Winton, Patricroft
 Exmouth, Nov. 11th; W. J. Godfrey, Rolle Street, Exmouth
 Green Street and District, Nov. 19th and 20th; W. G. Ray, Mount Pleasant Nursery, Green Street, near Sittingbourne
 Guildford, Nov. 12th and 13th; Arthur Jupp, Greencroft, Stoke, Guildford
 Hampstead, Nov. 12th and 13th; Robert Frisby, 47, Flask Walk, Hampstead, N.W.
 Hartlepool, Nov. 18th and 19th; B. C. Laycock, 147, Studley Road, West Hartlepool
 Hayes, Nov. 7th and 8th; W. Henry Burr, Dr. Triplett's Schools, Hayes, Middlesex
 Highgate, Hornsey, and Finchley, Nov. 5th and 6th; Thomas Press, 11, Victoria Cottages, Archway Road, Highgate, N.
 Hitchin, Nov. 14th and 18th; Pearson T. Harris
 Hull and East Riding, Nov. 19th and 20th; Edward Harland and James Dixon, Manor Street, Hull and 2, County Buildings, Hull
 Isle of Sheppey, Nov. 6th and 7th; James W. Fuller, 3, Alexandra Road, Marine Town, Sheerness
 Kettering, November 14th and 15th; H. T. Favell, 8, Mill Road, Kettering
 Kingston-on-Thames, Nov. 11th and 12th; G. Woodgate, Warren House Gardens
 Leicester and Midland, Nov. 14th and 15th; H. F. Anthony and E. E. Waite, Knighton Church Road, South Knighton, and 12, Diseworth Street, Melbourne Road, Leicester
 Lewes and District, Nov. 11th and 12th; Geo. Stroud, 20, High Street, Southover, Lewes
 Lindfield, Nov. 5th and 6th; Clive Wheeler, High Street, Lindfield, Sussex
 Liverpool, Nov. 18th and 19th; E. Bridge, 3, Cedar Terrace, Tarbock Road, Huyton
 National Society.—Great Festival, Nov. 11th, 12th, 13th, and 14th; R. Dean, Frampton Park Nurseries, Hackney

Norfolk and Norwich, Nov. 20th and 21st; John E. T. Pollard, 7, Lady's Lane, Norwich
 Northamptonshire, Nov. 12th and 13th; E. Draper, 2, Primrose Hill, Northampton
 Pembrokeshire, Nov. 6th; R. H. Treweeks, Main street, Pembroke
 Portsmouth, Nov. 5th, 6th, and 7th; F. Power, 36, Queen Street, Portsea
 Putney, Wandsworth, and District, Nov. 6th and 7th; John Moore, Upper Richmond Road, Putney
 Ramsbottom, Nov. 15th; H. H. Nutter, 14, Crow Lane, Ramsbottom, near Manchester
 Rugby, Nov. 19th and 20th; William Bryant
 Scarborough, Dec. 2nd and 3rd; Thomas Henry Pexton, 136, North Marine Road, Scarborough
 Scottish Horticultural, Nov. 20th, 21st, and 22nd; R. B. Ferguson, 6, South St. Andrew Street, Edinburgh
 Southend-on-Sea, Nov. 13th and 14th; John Brown, Reeko House, Hamlet, Southend-on-Sea, Essex
 St. Neots (Hants), Nov. 10th; William Ratchelous
 Street, Nov. 14th and 15th; A. D. Porter, Street, Somerset
 Stroud, Nov. 6th and 7th; E. C. Davis, 10, Rowcroft, Stroud, Glos.
 Swansea, Nov. 19th and 20th; Messrs. T. Kneath and W. Roberts
 Taunton, Nov. 13th; Edgar Poynter, Castle Green, Taunton
 Teddington, Nov. 13th and 14th; David Anderson, The Nursery
 Tiverton, Nov. 20th; R. P. Cosway, Lime Cottage, Tiverton
 Tooting, Nov. 5th and 6th; H. Brown, 39, Defoe Road, Tooting, S.W.
 Truro, Nov. 11th and 12th; Alfred Blenkinsop, 11, Princes Street, Truro
 Tunbridge Wells, Mid-Kent, and East Sussex, Nov. 12th and 13th; Ernest Charlton, 37, Ye Pantiles, Tunbridge Wells
 Twickenham, Nov. 18th and 19th; J. J. G. Pugh, 2, Heath Road
 Walkley, Nov. 7th; M. Taylor, 9, Spring Hill, Sheffield
 Wellington (Somerset), Nov. 14th; Charles Tite, Shutes House, Wellington, Somerset
 Wells (Somerset), Nov. 5th and 6th; Albion George Andrews, St. Cuthbert's Lodge, Wells, Somerset
 Westerham, Nov. 19th and 20th; Frank George Remnant, High Street
 Weston-super-Mare, Nov. 11th; W. H. Vanes and S. Lewis, High Street, Weston-super-Mare
 Wimbledon and District, Nov. 13th and 14th; Dr. Geo. Walker, 12, Lingfield Road, and W. W. Thomson, The Nurseries, Hill Road, Wimbledon
 Winchester, Nov. 13th and 14th; Chaloner Shenton, 74, High Street, Winchester
 Yeovil, Nov. 19th; E. H. Oakley, Eason Terrace, Yeovil
 York, Nov. 19th, 20th, and 21st; J. Lazenby, 8, Spurriergate



NOTES ON TEA ROSES.

IN reading the account of the Rose season of 1890 by "D., Deal," on page 331, I was pleased to see him recount the numerous successes during the season of the Rev. F. R. Burnside with his Tea Roses. His garden must indeed be a paradise when his plants are in bloom, and the thought of such a garden must make more besides myself feel a little envious, for in many parts of Lancashire we are so unfavourably situated as to scarcely attempt the cultivation of the choicer varieties of Teas, except in pots. For several years I tried with some of the better varieties in the open, but our soil is so stiff, and only a short distance from the clay, that it was a difficult matter (without having to go to a great amount of labour) to get any satisfactory return from them. Each time that I used to see such splendid boxes of Teas at the shows I always seemed to be braced up again for another trial, and having had a bundle of Tea Roses sent to me by a relative, I made another effort. I had three cartloads of road sweepings (which contained grit, leaves, and manure) and a few barrowloads of sods, mixed together. Having marked the ground out where I intended to plant, I took out a good trench and filled it up with the compost mentioned. I then planted the Roses carefully, filling over the roots with the same compost, and working it well amongst them. A slight treading completed the work. They stood the winter remarkably well, and I only lost one plant. This summer I have had some beautiful blooms of Safrano, Madame Falcot, Madame Cusin, Madame de Watteville, Homere, Souvenir d'un Ami, Niphotos, Madame Lambard, Madame Van Houtte, and several others. In addition the wood is in much better condition, and I intend to plant a few more this season, for I have been pleased with the result. I attribute in a great measure my share of success to the road sweepings, which contained the requisite properties to keep the roots in a sweet and healthy state.—R. P. R.

GARDEN ROSES.

I SEND you a list of Roses which I think may be useful to some of

your readers who may be planting Roses for decoration or for massing in beds:—La France, Cannes la Coquette, Mrs. Bosanquet, Souvenir de la Malmaison, the Old Pink China, common Moss, Mdle. Blanche Durrshindt, Earl of Pembroke, Rosa Mundi, Merveille de Lyon, Hon. Edith Gifford, Madame François Pittet, Madame Cusin, Madame Chedane Guinoisseau, and Viscountess Folkestone. As a climber, Gloire de Dijon is the best for all purposes, and Cheshunt Hybrid is a good companion.—J. L. B.

ROYAL HORTICULTURAL SOCIETY.

OCTOBER 28TH.

SCIENTIFIC COMMITTEE.—Present: Mr. McLachlan (in the chair), Mr. Morris, Mr. Blandford, Dr. Oliver, Dr. Scott, Dr. Müller, Dr. Masters, and Rev. G. Henslow, Hon. Sec.

The Fog Report.—Dr. F. Oliver reported to the Committee that through the kindness of one of its members an experimental conservatory had been placed at its disposal, and was now in process of equipment for the purposes of the inquiry into the effects of London fog upon vegetation. The pump for fog washing, mentioned at the last meeting, would be put in order and arrangements made for its use directly leave had been obtained from the Council of the Meteorological Society. Dr. Oliver further stated that he was fitting up his own conservatory attached to the botanical laboratories University College with apparatus of appropriate character, so that he could follow out both the macro- and micro-scope effects of fog, and also of some of the noxious constituents known to exist in fogs. The amended circular is now ready for distribution, and will be distributed forthwith.

Garrya elliptica in Fruit.—Mr. Morris exhibited sprays of the fruit of this North Californian shrub. The berries have a tomentose, ash-coloured, dry skin, and are compactly arranged in a dense spike. They were received from Mr. H. D. Pochin of Bodnant Hall, Denbighshire, who described it as fruiting well, and that numerous plants have been raised from the seeds. The male plant was introduced in 1828, and first flowered in the gardens of the Horticultural Society in 1834 (*Bot. Reg.*, tab. 1686).

Supposed Bigener between Dahlia and Helianthus.—Dr. Scott exhibited flowers received from Mr. E. J. Lowe of Shirenewton Hall, Chepstow, of white Dahlias, the supposed offspring of a cross between the ordinary single white Dahlia and Helianthus decapetalus. The "cross" agrees with Dahlia in general appearance, and in the involucre, shape of receptacle, paleæ, external characters of the florets, and form of stigmas, but differs as follows:—The corolla-tubes of the disk florets especially the outer ones, are more ventricose. The stamens are shorter; the pollen has blunt and obliquely truncate prickles, and not conical as in the Dahlia. The style is shorter, the stigmatic arms being less divergent, with shorter papillæ. The above differences do not appear to amount to more than may be perhaps seen on various seedlings of Dahlia. The fruits, however, show more pronounced peculiarities, besides being only one-fourth in quantity. The achenes are smaller, less compressed, much less obovate in form, and have prominent ribs, which are not evident in Dahlia. The achenes are also about half as long. It may be added that neither in the pollen or stigmatic character does the "cross" agree with Helianthus. Mr. Lowe observes that in a cross it is often difficult to detect the effects of the male parent, and mentions Fuchsia fulgens crossed by "Semiramide" and the reciproca cross, the seedlings in both cases resembling the female. Other observer have experienced the same fact, or, as Mr. Lowe expresses it, the female parent "received life from the pollen without showing traces of it, the active property of the male seeming to be enough to produce seeds, but not to show the characters of the male."

Apple Diseased (?).—A remarkable Apple, with a superficially translucent appearance, was received from Mr. Marshall of Bexley. Being possibly due to a fungus it was forwarded to Professor Ward for examination and report.

Carex Species (?).—A plant was received from Mr. Robson of Altrincham for name; not being in flower it was referred to Chiswick for cultivation.

Grapes Attacked by Larvæ.—Some Grapes were received from Mr. Galpin of Putney Heath, with the supposed larvæ of Tortrix angustiorana. Some doubts being expressed by Mr. McLachlan as to their identity, they were referred to Mr. Blandford to rear and to report upon them later.

FUCHSIAS.—These again now play an important part in many floral arrangements, and the showery season of 1890 has suited them admirably. In some instances good sized specimen plants were kept in their pots and plunged, and in other cases they were planted out. The latter plan answered best, the plants surpassing those plunged in spite of the good attendance the latter received, but when it comes to lifting and storing those already in pots are much the least trouble. The others can be taken up and potted, using any common loamy soil and pots just large enough to hold the roots, the soil being firmly packed about these. They are given a good watering when first lifted, and subsequently no more is supplied than is needed for keeping the wood plump yet dormant. Fuchsias keep fairly well after the foliage has fallen if laid on their sides under a greenhouse stage, and also in light sheds and outhouses.—B.



NEW CHRYSANTHEMUMS.

At the meetings of the Royal Horticultural Society's Floral Committee on October 28th, and of the similar officials of the National Chrysanthemum Society on the next day, October 29th, several very promising novelties were shown, and as nearly twelve at the two places were found worthy of certificates some idea can be formed that the general merits were above the average. Numerous as are the varieties now in cultivation it is evident that we can still expect useful and handsome additions from the Continent, from America, and from our own raisers. The best of those shown were the undermentioned.

GLOIRE DE ROCHER.—For this handsome Japanese variety a first-class certificate was unanimously awarded, and the general opinion seemed to be that it would take a place amongst the best novelties of the year. It was shown by Mr. C. Gibson, gardener to J. Wormald, Esq., Morden Park, Mitcham, and concerning it there is a rather interesting history. Mr. Wormald for some years past has, on account of ill health, spent the winters with his family in Algiers, and has there indulged in what may be termed horticultural recreation under better climatic conditions than prevail at Mitcham. Chrysanthemum cuttings and plants have at various times been sent out to him and his friends there, and most of the best varieties in cultivation here have thus been despatched. A year or two since young plants of a selection of Japanese were, however, specially sent over, with the object of securing seed. One of Mr. Wormald's friends has succeeded in raising a large number of seedlings, but apparently without any special crossing, or even without preserving the names of the parent plants. Some of the more distinct were sent from Algiers to Morden Park to see what characters they would develop under Mr. Gibson's care, and up to the present "Gloire de Rocher," the name of which indicates the place where it was raised, is by far the best.

I saw this soon after the bud showed its colour, and again later on when it was much more advanced. Then it was somewhat in the style of Mrs. Falconer Jameson, but with more substance in the florets, and the colour was an improved Val d'Andorre, very rich and telling. A few days later it had completely altered in character—the florets instead of spreading flat had straightened and developed until the bloom was quite globular in form, of considerable size, the colour still very bright, and the florets showing their reverse surface of a golden bronze tint. The illustration (fig. 54) was prepared from one of the blooms shown, and it was stated after the meeting that the stock had passed into the hands of Mr. N. Davis.

It is surprising that our British nurserymen, who make a speciality of Chrysanthemums, have not made a more general system of engaging agents in suitable places to raise seedlings for them on some definite principle instead of having to depend almost exclusively upon continental and American growers. Even where seed has been sown here it is strange what a roundabout way our people have of procuring it. For instance, I know one nurseryman here who has been successful in obtaining several novelties of undoubted merit, yet who obtains all the seed from a German firm, who again has to procure it from growers in the South of France, Italy, or Algiers. Now that such good prices are secured for new Chrysanthemums possessing distinct characters an investment of this kind might be expected to find a fair return on the outlay, much more, indeed, than when the demand was limited to a comparatively few specialists.

MADAME GAYRAT.—Perhaps next to the variety just described the one here noted attracted most attention at the National Society's meeting, and especially because new incurved varieties are so seldom brought out. It is a medium sized bloom, very neat, clean, well built, and with florets of good substance; white, or pearly blush, tipped with pink. It is much in the style of the seldom seen variety Aimée Ferrière, from which it is said to be a seedling, and some expressed doubts as to whether it would be found distinct enough for exhibition purposes. In the general opinion, however, it was superior to the parent in all points, while a few regarded the suggestion that it was a small Jeanne d'Arc. It found sufficient favour to gain a certificate by a good majority of votes, and will no doubt be tried by many next season. Mr. Robert Owen was the exhibitor. I have seldom seen a first rate bloom of Aimée Ferrière, but a few days after the meeting I saw one that might be considered an excellent type of the small flowered incurved which so many wish to encourage.

MRS. IRVING CLARKE.—This is a Japanese of American origin sent out by Craig last year, and found its way here, but I do not remember seeing it shown anywhere until now. The blooms are large and of good substance, with rather narrow curled florets of a pale but clear and pleasing flesh pink colour, the glossy surface of the florets adding to its appearance. A certificate was awarded to Mr. Owen for this variety, which has been included in the N.C.S. list of select Japanese for exhibition, and merits the attention of those in search of novelties worth adding to present collections.

Certificates were also awarded for the following, which will be referred to at length another time. William Laing (Owen), Japanese

reflexed, rosy salmon; Alberic Lunden (Owen), Japanese reflexed, rich magenta, very deep colour; Duchess of Westminster (Owen), Japanese Anemone, bronze centre, blush rosy florets; Vivian Morel (Laing), Japanese, rose and white striped, large and handsome, certificated N.C.S. and R.H.S.; Mdle. Marie Hoste (Laing), a Japanese, white streaked pale purple, very distinct; William Neville (Cannell), reflexed, average size and good form, deep orange.—LEWIS CASTLE.

THE NATIONAL CHRYSANTHEMUM SOCIETY.

THE following circular and programme respecting the Centenary Festival at the Royal Aquarium, November 11th, 12th, 13th, and 14th next, has just been issued by the Hon. Secretary (*pro tem.*):—I am desired by the Committee to remind you that the Great National Centenary Festival will take place as above, and I shall esteem it a great favour if you will make this important occasion known as widely as possible to all lovers of flowers in your neighbourhood. It is an occasion when all admirers of the Chrysanthemum should cordially unite to make the celebration worthy of the National Society. Earnest attention is called to the following particulars:—The Committee appeal to all supporters of the Society to assist in making the Exhibition the most extensive and important ever held, by contributing exhibits, and especially specimen plants, so that an imposing and thoroughly representative display may be made; also to be willing to leave their plants on view the entire four days the Exhibition is open to the public. The Superintendent is empowered to pay a certain proportion of the cartage expenses. The work of judging will commence at eleven o'clock, when the hall will be cleared, and all exhibits must be staged ready for the Judges by that hour. To facilitate staging, a number of stewards are appointed to direct exhibitors in doing so.

The opening ceremonial will take place at 1 P.M., when Lord Brooke, M.P., President of the Society, and Lady Brooke will be present. After an inspection of the Exhibition, an address will be presented to Lady Brooke, and her ladyship will declare the Exhibition open. Conferences on the Chrysanthemum will take place on Tuesday, the 11th, and Thursday, the 13th; at 6 P.M. on the 13th, a grand banquet will take place in St. Stephens' Hall, in lieu of the annual dinner, Lord Brooke, M.P., the President, in the chair. On this occasion ladies will be present. Applications for tickets, price 5s., accompanied by a remittance, must be made to the Hon. Secretary, not later than the evening of Monday, November 10th.

Programme.—Tuesday, November 11th. The Exhibition will be arranged ready for Judges by 11 A.M. The Floral Committee will meet at 12.30 P.M. The opening ceremonial will commence at one o'clock. The President, Lord Brooke, M.P., and Lady Brooke will be met at the entrance by the Reception Committee and the invited guests, and conducted round the Exhibition. An address will be presented to Lady Brooke, and the Exhibition formerly declared open to the public. At 6 P.M. a Conference meeting will be held in the iron room under the presidency of Sir Edwin Saunders, F.R.C.S., V.P., and papers will be read by Mr. Shirley Hibberd, F.R.H.S., "On the Origin of the Florist's Chrysanthemum;" by Mrs. Marian Throver, representative of the Northern Tasmanian Horticultural Society, "On Chrysanthemums in Tasmania;" and by Mr. G. T. Haite, F.L.S., "The Chrysanthemum in Art." Wednesday, November 12th, will be devoted to an inspection of the Show, verifying awards, &c.

On Thursday, November 13th, a conference will be held in the iron room at 2.30 P.M., Sir Guyer Hunter, M.P., Vice-President, in the chair, when papers will be read by Mr. Briscoe-Ironside "On Experiments in Chrysanthemum Culture," and by Mr. C. Gibson "On Chrysanthemums for Exhibition." At 6 P.M. prompt a grand banquet will take place in St. Stephen's Hall, Lord Brooke, M.P., President, in the chair, supported by representatives from foreign and colonial affiliated societies and others. Private entrance from Broad Sanctuary.

On Friday, November 14th, St. Stephen's Hall will be arranged as a lounge, so as to afford opportunity for conversation. At 4 P.M. an informal meeting will be held with the object of affording opportunity for suggestions as to the future operations of the Society. The Exhibition will close at 9 P.M.

THE NATIONAL SOCIETY'S SCHEDULE.

To the National Chrysanthemum Society is due the honour of offering for competition the largest amount of prizes for one class, and a thoroughly comprehensive schedule of prizes has been prepared and issued, if I except one thing. Single Chrysanthemums have no provision made for them, although they are invited in a honorary manner. Out of the fifty-four classes contained in the schedule, one thinks there might have been found room for at least one class for this very interesting section. To some persons single Chrysanthemums have a charm which no other kind supplants. I fancy that those persons who are responsible for the compiling of the schedule have never seen these blooms in the same condition as they are always staged at Portsmouth for instance, where they are one of the features of the Show, or they would I think find room for them. If they are wishful to encourage the growth of this section, they ought to know full well that the simplest, most rapid, and effective manner of gaining this end is to offer substantial, or even a small recognition, for the trouble expended in obtaining the necessary effect. Some may think perhaps that as I have thus written at some length upon this omission of an otherwise excellent schedule, that I am doing so in a earping spirit. Such is not the case. I know full well the value of single Chrysanthemums in a decorative point of view, my object being to encourage their extended growth in

all possible ways, and in no manner can this be so well done as by the making a class specially for them. Public encouragement is needed to

all to be distinct, and for which the unprecedented sum of £75 is offered in prizes, allotted thus—£25, £20, £15, £10, and £5, in the order here



FIG. 54.—JAPANESE CHRYSANTHEMUM GLOIRE DE ROCHER.

ensure success in any phase of class making. No matter in what reasonable manner classes are made there are certain to be exhibitors.

What is termed the centenary class is one in which forty-eight blooms are stipulated for, half to be incurved and the remainder Japanese,

named. In addition all the competitors in this class will be presented with a bronze centenary medal in commemoration of the festival. Surely such prizes as these have never before been offered for Chrysanthemums, and should bring competitors in strong force. Hitherto the complaint amongst

growers of these flowers has been that the value of the prizes has been so unequally balanced between the first and the following prizes that a second prize collection, which may be only slightly inferior to the first, gets but a small compensation as compared to its relative merit with the premier collection. In the present instance the Committee have wisely prepared for any objection in this direction, as also they have in demanding that such prizes shall be won by distinct blooms, entirely ignoring the duplicate system of stipulating for twenty-four blooms in either section, but not more than eighteen varieties. There is no doubt but that the existing conditions are the correct ones in such a class as this; it provides a surer test of the skill of any grower to produce forty-eight blooms in this manner than where duplicates are allowed. Now with such a large increase of varieties in both sections, the task set is not nearly so arduous as it was a few years since. Even if no other class was provided in the schedule, the Committee of the National Chrysanthemum Society deserve a splendid exhibition in these two sections provided for cut blooms, for the spirit displayed in offering so much money to be competed for. But it would not surprise me much if competition were limited after all to a few of the leading exhibitors. Let us hope this will not be the case.

Class 2 in the schedule is set apart for the competition of Societies, known as the "Trophy" prize, the handsome sum of £10 going with the premier object in this class. In this case the blooms may be the production of one or more growers, but to be staged in the name of the Society to which each contributor belongs, of course all belonging to the one Society in whose name the entry is given. The cash to be equally apportioned to the growers of the flowers staged. This class will be likely to suffer somewhat this year in consequence of the larger one previously noted. I should not be surprised either if the class were altogether dropped in a few years, as beyond the cash prize there is no ultimate end for the Trophy. It is a novelty, such novelties generally have a short existence.

Class 3 is for forty-eight incurved blooms in not less than twenty-four varieties, neither shall there be more than three blooms of any one variety. Splendid prizes are here offered, also £10, £7 and £4 are the sums for the three prizes, with the addition of the bronze centenary medals for all competitors. Such a class as this provides a splendid opportunity for a display of the "Queen" family, and now that they are so numerous no doubt they will be used in great force in providing massive stands of blooms. For those who cannot stage such a large number of blooms as demanded in the preceding class others of less numbers are provided, classes 4 and 7 being for twenty-four and twelve blooms respectively, both stipulating for distinctness of kind. Substantial money prizes are offered in both classes. Even another class is available for those who cannot stage in these just mentioned. Class 8 being for twelve blooms distinct, those competing in previous classes not to do so in this. Such an arrangement provides opportunities for all who are wishful to compete.

Classes 5 and 14 are devoted to what I will term "novelty" classes. In both the Veitch medal and £5 is offered as first prize, with sums of £3 and £1 as second and third prizes, for twenty-four blooms of incurved and Japanese kinds distinct, "to be staged with not less than 8 inches stem above board, with foliage as grown." From the wording of the class there is nothing to prevent the blooms being "dressed" in the orthodox manner, excepting, of course, the length of stem stipulated for, although I infer such is not the wish of the framers of this class. The Veitch medal is a prize I know highly coveted by gardeners in general, and it is to be hoped that good competition may be the result of these classes, and something new in the manner of presenting blooms to the public may be witnessed in consequence.

Class 6 provides an opportunity for those who are continually "railing" at the presence of such large flowered sorts as the Queen type, at the expense of smaller and neater varieties on the exhibition table, as it provides for the latter to the exclusion of the "objectionables," as I will term them. I shall not be surprised if those who have grumbled the most do the least towards filling this class. The particulars are as follows:—Eighteen incurved blooms distinct, excluding the Queen and its synonyms; neatness and symmetry to be considered of greater importance than mere size of bloom. And as there are now so many beautifully formed blooms naturally of the Princess and Teck varieties, there ought not to be any difficulty whatever in securing the necessary number. Given an equality of flowers the person who is the greatest expert with the dressing instruments will carry off this prize, and may not inaptly be called the dressers' class. It must not, however, be assumed that good dressing only will succeed. The blooms must be available first, no matter how well a dresser may act he cannot turn a badly grown bloom into a perfect one; what he can do is to improve those already well grown. This class will no doubt prove as interesting to many as any in the schedule. The prizes are good, £5, £3, and £1 being offered.

Similar classes are made for the Japanese section as for those noted, and will no doubt cause a greater display. Competition generally is more keen than in the incurved section; varieties to choose from are much more numerous, and the forms so variable that a greater number of people prefer these to the stiff-looking incurved. Prizes are also offered for the usual six blooms of one variety in both sections, and for the same number of blooms of certain new varieties.

Classes are also provided for reflexed, Anemone, and Pompon sections, the latter always producing strong competition. In the present case there should be no falling off in this respect. The prizes in all cases are certainly adequate, and the conditions easy.

For the first time I note a class has been made for twelve Japanese incurved blooms, but without any intimation of what is considered to be an incurved bloom of this family or section. No doubt exhibitors of experience will stage only those which properly come under the designation of incurved when fully developed, which is the correct estimate of an incurved Japanese specimen. Many sorts incurve their florets when unfolding them, but as they develop an alteration is effected, the same kinds being then thoroughly reflexed. Such as these in a half-expanded state cannot be taken as examples of what is required.

Amateurs, single-handed gardeners, and metropolitan growers are well provided for. Numerous valuable prizes are set apart for them by the Society and through the kindness of enthusiastic donors. In classes 35, 36, 37, and 38 the conditions state that these classes are for those who employ one permanent gardener, and also for single-handed gardeners. I take it that what is meant is that the employer of a permanent gardener may compete in his own name, as also may the single-handed gardener with his employer's property, in the same manner as the gardener who has, say ten or more men under him. The two cases in the classes referred to here are, as far as the gardeners are concerned, identical, both coming strictly under the heading of single-handed. I consider these regulations slightly confusing in the manner indicated in the schedule. A class for an unlimited number of cut blooms, any varieties, is set apart for foreign growers, of which it is to be hoped they will avail themselves, which would provide means of comparison between home and foreign produce. This is a capital opportunity for M. Phatzer to show us what can be done in Roubaix.—E. M.

CHRYSANTHEMUM BLOOMS DAMPING.

IN my opinion the damping of Chrysanthemum blooms arises from various causes. Rank immature growth, caused by loose potting and the excessive use of stimulants, coupled with taking buds too early and leaving the plants out of doors too late in the season, in order to keep the flowers back, is, I feel certain, one of the causes of blooms damping. This season I left outside a few plants after they showed colour, notably Belle Paule, Stanstead White, Queen of England, and some others. Since housing they have more or less succumbed to damp.

Firm potting in good fresh fibry loam, preferably from a limestone district, with one-fifth fresh horse droppings, the same quantity of burnt refuse, and about one-twentieth dissolved bones or bone dust I find the best compost for the final potting. I commence feeding as soon as the pots are full of roots, using soot water, farmyard liquid, and the liquid from a cesspool alternately in a weak state, and occasionally (say once a week) give a little sulphate of ammonia, 1 oz. in each four gallons of the liquid until the blooms are about a quarter open, then discontinue feeding. After housing I sprinkle the lower leaves, &c., and all available surface of the house with flowers of sulphur, and am very careful with ventilating, airing the houses as carefully as a forcing house during the spring months, and in dull damp weather always keep the pipes slightly warm. I find that the blooms are more free from damping in a dry airy house than one where the atmosphere is at all stagnant.

Watering is always done in the morning, and any moisture from the pots is always dried up with a cloth after it has passed through. Where practicable I always elevate the pots on wood trellis, staging so that plenty of air can play through the plants, besides having the advantage of raising them up to the light. I know nothing as a cure for damping in blooms, but use the above precautions as a preventive. Plants should always be housed before they show any sign of colour in the blooms.—W. J. IRELAND, *Singleton Gardens, Swansea.*

DRESSING CHRYSANTHEMUM FLOWERS.

MUCH has been written and said for and against the practice of improving the appearance of the flowers by this practice of pulling out with tweezers malformed and superfluous florets, and arranging those left in the best manner possible, so as to present the flower as nearly perfect in form as may be. Many decry dressing in any form, and contend that all flowers should be exhibited as grown, but were the committees of Chrysanthemum societies generally to provide a class or classes in their prize schedules for such blooms, I am convinced that from several combined causes such efforts must soon end in failure. So long as judges award the prizes to the most highly finished and perfect flowers, and the public by their verdict support them in so doing, so long will exhibitors endeavour to secure such finish and perfection by all legitimate means, of which proper dressing—which allows of adding nothing whatever to, but only taking from, that which is imperfect or superabundant—is one. The aim of the dresser should not be to in any way distort the flower, or to alter it from the form Nature intended it should take, but merely to assist in perfecting it in such form.

To do this most effectually, and with the least possible injury to the blooms, it should be commenced when they are only partially developed, and be continued, doing a little in the matter of the removal of faulty florets, seed organs, &c., at intervals of a few days until the growth of the bloom is completed.

What is termed "centering" the blooms is a practice now generally adopted by exhibitors, and should be performed when the blooms are about three parts developed. This consists in taking out with a pair of somewhat broad and sharp-pointed tweezers a small portion of the centre of the bloom, generally about half an inch across in large flowers, and containing an innumerable quantity of small undeveloped petals, the taking away of which allows the surrounding ones to develop fully, and assume the required form. Many of the largest among the

Queen family, such as Queen of England, Empress of India, Emily Dale, Bronze Queen, Golden Queen, &c., when well grown form a hard centre most densely packed with small florets, which could never all properly expand, and in endeavouring to do so unassisted they would cause the upper half of the bloom to reflex instead of incurving. Blooms so grown could not after being cut be made by any skill in dressing to appear perfect in form, whereas they can be by judiciously centering them when only partly developed, and whilst the flower is still growing. Nature is thus assisted to complete her own work in her own way. Some varieties, such as Princess of Wales and its sports, Prince Alfred, Lord Wolseley, Venus, Mrs. Rundle, &c., when well grown require scarcely any dressing, save the removal perhaps of a few faulty florets, whilst the blooms are growing; whilst others, such as some members of the "Queen" family mentioned above, Refulgence, Lady Hardinge, Mrs. W. Shipman, Prince of Wales, Jeanne d'Are, and some others require much attention whilst growing, and some skill after they are cut to secure perfection.

The last named variety when grown from the crown bud is most likely to come with florets split at the end, recurving a little at the points. No amount of skill or patience in dressing will render such a smooth perfect flower. It is therefore always advisable to take terminal buds of this variety, which, although producing slightly smaller flowers than those from crowns, are much smoother, and more likely to assist in gaining a prize than the larger but rougher. Japanese varieties require less attention to dressing than the incurved, but even they may be assisted and improved, always remembering that whatever form or type Nature has intended the flower to take is the type to be aimed at, and all which is done to the flower in the matter of extracting faulty florets, removing centres or rearranging, incurving, or straightening florets left, should be with the object of rendering such type as pronounced, complete, and perfect as possible.—W. K. W.

CHRYSANTHEMUMS AT LEWISHAM.

MR. H. J. JONES is well known in the Chrysanthemum world, for during many years he has been more or less identified with the culture and exhibition of the plants, especially during the past three or four seasons when in business with Mr. N. Davis. He has now returned to his old district, and the Ryecroft Nursery, Hither Green, Lewisham, provides him with scope for his energy and perseverance. One large house is devoted to a display of Chrysanthemums, and not only is the house one of the largest appropriated to this purpose around London, but the show is also for effectiveness one of the best we have seen. The structure is 104 feet long, 25 feet wide and 14 feet high to the central ridge. About 2000 plants are included in 350 varieties, and there are not less than 10,000 blooms expanded at the present time. The plants are dwarf, and are arranged on one slightly sloping bank from one side to the path, so that an uninterrupted view is at once obtained upon entering the house. Most of the plants are grown without any severe disbudding, and have a free natural appearance admirably adapted for grouping. Thus there are over 100 Mdle. Lacroix in 24-size pots, flowering profusely, their pure white flowers showing to excellent advantage at the back or interspersed amongst the others. The collection comprises the best varieties in all the sections as well as many novelties that have not yet been fully proved, though they seem very promising. Special attention is being paid to the continental raised incurved, which have been generally discarded here as worthless, perhaps often without giving them an adequate trial. From one raiser in particular Mr. Jones has secured some new varieties that are worthy of note. One of these, named Camille Flammarion, is a purple tinted incurved, several shades darker than Violet Tomlin, as there grown. Sarah Bernhardt is another incurved purple and white. Madame Farrien is a medium sized variety of the same type, golden bronze, while M. R. Bahuant, if it keeps its character as a true incurved, is very extraordinary. The florets are very broad, of a deep rosy red tint totally distinct from any other variety in form and colour. It is said to be a seedling from one of the Queen type raised by M. Hoste. Madame Mante is another incurved of a fine bronze tint, the florets broad and obtuse, forming a neat bloom. Chrysanthemums are not, however, the only objects of attention. Tuberous Begonias and Tomatoes out of doors have been special features during the season, 20,000 of the former being planted out, and from the latter some tons of fruit have been obtained. Mr. Jones is evidently in earnest in his work and deserves success.—VISITOR.

CHRYSANTHEMUMS AT THE ABBEY PARK, LEICESTER.

THE fine Chrysanthemum house at this well-managed park is now filled with a fine lot of strong, short, sturdy plants, having excellent foliage well down to the pots, and giving abundant promise of producing a fine display of flowers, which will be at their best about the middle of November. The house is a handsome light structure with a double span-roof supported on light iron columns, which are draped with greenhouse climbers in which *Cobaea scandens variegata* plays a conspicuous part.

The size of the house is 60 feet by 40 feet. The plants are all arranged in sloping banks on the gravel floor. A very broad bank runs up the centre of the house, sloping each way from the broad gravel paths under the centre of each roof-span to the top of the columns supporting the central roof tree. The plants next the path are not more than 3 feet in height—what are known as cut-backs; whilst those against the central columns are natural grown standards 8 or 9 feet in height. These close up between the opening between the two sections

of the house, and give it the appearance of being two separate houses connected by a broad pathway between other banks of Chrysanthemums at the further end from the doors. This seems an admirable arrangement for a house intended for a public display. As the visitors, who esme in their thousands, pass in regular order up the first house between the sloping banks on each side, across the end, and down the other house likewise, the outgoing stream thus emerging some 20 feet from the ingress, and preventing confusion. About 1400 plants are housed, of which fully two-thirds are grown on the cutting down principle. Many of the earlier varieties are now carrying some very fine flowers, which would make a creditable display on the exhibition table, and, indeed, considering that the plants producing them were "cut-backs," I was astonished at their depth and solidity. Very fine indeed was F. W. Burbidge in the way of Mdle. Lacroix, but a fuller, deeper flower, of a purer white, and every way superior as here shown. Chas. Lawson, a pink reflexed Japanese was also very fine, also Miss Gorton, a full reflexed flower in the way of Bouquet Fait, but larger, and Dr. Dufresne, a new French variety, creamy yellow, reflexed Japanese. Amongst older sorts now in fine condition are Mandarin, Mons. W. Holmes, Lord Wolseley, Lady Selborne, Dr. Macary, Hiver Fleuri, Marguerite Marrouch, Maiden's Blush, Reverie, L'Isle des Plaisirs, Comte de Germiny, James Salter, Japonaise, Fernand Feral, Soleil Levant, Mrs. Dixon, Geo. Glenny, Mrs. G. Rundle, &c. The present is not the first, but will be decidedly the best public display yet held of the flower in this park, and appears likely to compare well with the excellent displays of like character in Finsbury Park and the Temple Gardens. Mr. Burns, the able Superintendent, seems determined that in all such matters the park under his charge shall be equal to any elsewhere, and in this he is ably seconded by his foreman, Mr. Burton, to whose skill as a cultivator the present fine condition of the Chrysanthemums is due. The display will be open to the public throughout the present month.—W. K. W.

CHRYSANTHEMUMS IN THE ISLE OF WIGHT.

I MUST confess to an agreeable surprise to find Chrysanthemums so well grown here. Much interest is taken in the flower, and it is evident that gardeners, amateurs, and I might say cottagers, have got the prevailing fever. The town of Ryde encourages two exhibitions, one the first week in November for the professional element, and the second a fortnight later for the cottagers. At the first Exhibition some good cut blooms are generally shown, the tug of war resting between Mr. G. Wilkins, gardener to W. S. Ridley, Esq., The Castle, St. Helens, I.W., and Mr. J. Earle, gardener to Henley Grosse Smith, Esq., The Priory, St. Helens, both of whom are very good growers and exhibitors. J. O. Brooke, Esq., Swanmore, near Ryde, is an enthusiastic amateur, and grows and shows well, and is generally to the front. The baskets, epergnes, designs, and stands of triplets that are encouraged at this Exhibition form an agreeable relief to the visitor from the monotonous rows of cut blooms. There are no stiffly trained plants exhibited here, but, trained on the bush system with from thirty to fifty flowers of good average quality, they make a good display. Mr. G. Wilkins is generally to the front with these, and this season he bids fair to hold his own. Newport, too, in the centre of the island, holds an Exhibition during the second week of November, which is well patronised, market growers, amateurs, and cottagers coming out well. The climate here is favourable for plant growing and ripening the wood; the greatest art is in "timing the buds," many of the Queen family and other early incurved coming too early if the bud was taken to suit exhibitions near London. Mr. G. Wilkins this year seems to have hit the happy medium. His plants are very strong and heavily timbered, and the incurved blooms, especially the Queen section, look very promising. A salmon buff sport of two blooms from a Golden Empress resembles Emily Dale or John Doughty—another instance of the confusion likely to arise with these sports this year. This is not recognised as anything new.

I find here there is the old grievance of getting varieties not true to name. Moonlight has been bought, grown, and shown for Pelican, White Venus for Mrs. Heale, and Mr. Wilkins has just got a plant this year that he purchased for Golden John Salter which turns out to be Mr. Brunlees. To the cultivator that has gained experience the disappointment would be bad enough, but to the uninitiated it means confusion and possibly disqualification on the exhibition table. I have seen good blooms of Violet Tomlin, but some have come very pale, and likely to cause a little confusion with its parent the Princess of Wales. Volunteer (Jap.), an American introduction, is likely to make a good show flower. It has long spreading flowers, blush white. Mr. Wilkins has got two good flowers, also Mrs. J. Wright on a cut down plant, very good. Mr. G. Burt, gardener to — Darnley, Esq., Brading, has got a good show of bloom, very select but good varieties, distinct decorative varieties finding most favour. Volunteer is here very good, being tried with other new ones for the first time. Avalanche, Sunflower, Wm. Robinson, Wm. Cobbett, Salmon, Mr. Matthews, Terra-cotta, Wm. Holmes, Mrs. Orchard (reflexed Jap.), Old Gold, and Mrs. J. Wright being amongst the best that find favour in a very interesting collection. There are many others, but time will not admit of more being said at present.—C. ORCHARD.

CHRYSANTHEMUMS AROUND LIVERPOOL.

CLEVELEY ALLERTON.

MR. CROMWELL grows 600 plants, mostly on the tall system, and all looking very promising. Most notable in the Japanese are Belle Paule, Comte de Germiny, Madame C. Audiguier, Volunteer, Etoile de Lyon, and Stanstead White, extra strong; Sunflower, Charlie Sharman, Sarah

Owen, and Mrs. J. Laing. Of incurved varieties the Queen family all look very well, and some excellent flowers are showing of Mr. Bunn, John Salter, Violet Tomlin, Empress Eugénie, Miss M. A. Haggis, &c. Amongst new varieties W. W. Coles and Mr. A. H. Neve are very good. Of Ada Spaulding it was too early to speak, but the plants were strong. The flowers are being developed in the Azalea house, and will be taken from there to the corridor, the roof of which is glazed with Hartley's rolled glass, the flowers keeping a long time under the subdued light.

AYMESTRY COURT, WOOLTON.

Mr. C. Osborne, Captain Robinson's head gardener, has a collection of some 250 plants, exclusive of Pompons, &c., which are grown on the pinched and the three-bloom system, and right well they are grown. The Japanese section is very good, the following being the most conspicuous:—Japanese.—Mons. Bernard, Etoile de Lyon, and Sunflower are the best I have seen so far; Avalanche, Boule d'Or, Mrs. F. Jameson, Stanstead White, Comte de Germiny, M. J. Pigny, J. Delaux, Fimbriatum, Condor, E. Molyneux, Stanstead Surprise, Meg Merrilies, T. Stephenson, and R. Brocklebank. Incurved.—Jeanne d'Arc, Princess of Wales, Violet Tomlin, Lord Wolseley, Prince Alfred, and the Queen family are very good; also Princess Beatrice. Newer varieties are Puritan, fine; We Wa Mr. Osborne considers identical with Mrs. Wheeler, and does not intend to grow it again; George Maclure, and Sunset, not expanded, but very promising; Mrs. A. Carnegie, a beautiful colour, with large buds; Volunteer is not considered nearly so good as Belle Paule; W. W. Coles, excellent; Madame Louise Leroy is one of the finest introductions; and, last, Mrs. Alpheus Hardy, which is all the raiser claims for it, and a great beauty. Mr. Osborne has exhibited for several seasons with much success, and is likely to be seen again this year.

OTTERSPOOL, AIGBURTH.

Although Mr. Lindsay, through the death of Sir T. Edwards-Moss is not likely to exhibit this year, Chrysanthemums at Otterspool are still largely and well grown. They are not so tall as usual, but are sturdy well matured plants, with thick leathery foliage down to the pots, and would no doubt have done him credit on any exhibition table. The following are developing grand blooms:—Etoile de Lyon, Stanstead White, Stanstead Surprise, Avalanche, Marsa, Mrs. Falconer Jameson, and Bouquet de Dami, a beautiful full silvery white flower, which ought to be better known. Amongst the incurved Miss M. A. Haggis, Violet Tomlin, Mrs. Heale, and Princess of Wales stand out prominent. The Queen family is represented in Mr. Lindsay's excellent style. The secret in the timing of these lies in early pinching. At Otterspool few are grown on the orthodox system, but from six to nine flowers are aimed at. If more collections were so treated less would be heard of being too early or too late. By so treating them Mr. Lindsay believes a late or intermediate crown bud is secured, which is the one that develops into the most perfect and well timed show flower. Avalanche so done, and carrying twelve flowers, was quite a show. I have in my mind's eye a plant of Pelican which I saw two years ago. It was in a 9-inch pot, and carried six magnificent flowers, which I have never seen equalled, I trust Mr. Lindsay may soon be seen as an exhibitor again, for his stands were always of the highest order.

HIGHFIELD, WOOLTON.

Here there is a collection of 500 plants, and although Mr. Haigh, Mr. W. H. Tate's excellent gardener, does not exhibit, his collection is a rich one and well grown, and if he exhibited he would be a formidable opponent. Particularly striking in the Japanese were Album Fimbriatum, Etoile de Lyon, Stanstead Surprise, Stanstead White, Condor, Mons. Bernard, Boule d'Or, T. Stephenson, Holborn Beauty, Meg Merrilies, R. Brocklebank, C. Wagstaffe, and William Holmes, a charming pair for decorative work. Violet Tomlin superseded all others of the variety I have seen this year. The blooms were over 4 inches deep, and all other parts in proportion. Princess of Wales, Empress of India, Prince Alfred, Lord Wolseley, Refulgence, and others were of the highest quality. Of the newer varieties I may draw your readers' attention to L'Automne, a splendid salmon buff incurved variety, a large flower, excellent in petal, and one which ought to be in every collection. Volunteer is not cared for, and I saw Ada Spaulding for the second time. I must see it much better before I would grow it. It is more like an incurved Japanese of a very poor variety. Leon Fraiche is really a grand variety, and Mr. Haigh does not intend to grow We Wa again. John Doughty is spoken highly about.

ELM HALL, WAVERTEE, LIVERPOOL.

On my visit to Mr. Cox I found him looking over his Chrysanthemums, of which he has this year 500 plants, arranged here, there, and everywhere. They are all grown on the non-pinched principle, and many of them are much shorter than usual. The Japanese are excellent, and here I saw some of the finest flowers of E. Molyneux I have ever seen. Others worth noting: Avalanche, Album Fimbriatum, T. Stephenson, Belle Paule, Madame C. Audiguier, Jeanne Delaux (magnificent), B. le Prailly, Sunflower, Carew Underwood, Mons. Bernard, Stanstead White, and Stanstead Surprise. The incurved were very solid and broad in the petal. The Queen type were represented by very fine flowers; the same may be said of Princess of Wales family, and again of the Tecks. The newer varieties in the Japanese were Annie Clibran, syn. Pink Lacroix, very good; and Oriental, a beautiful, narrow-petalled variety, of a venetian red colour, flaked with gold. It is one Mr. Cox thinks

will come much larger another season, and if so it is destined to become a great favourite. Of the incurved John Doughty is a splendid addition, and a century in front of Bronze Queen. Mrs. Coleman is a grand variety, and for size Emily Dale Improved is far away ahead of Emily Dale. Of Anemones, Gladys Spaulding is one which ought to be in every collection. There is here a striped sport from Queen of England. It is of a lighter shade, but with a violet stripe down each petal; a very pretty variety. Although so many of the large flowering ones are grown, Mr. Cox has wisely made ample provision by growing a houseful of Pompons, Anemones, and reflexed varieties for cutting purposes. Mr. Cox is well known, having taken many first-class prizes, cups, &c., and his blooms are just right for the shows.

CAMP HILL, WOOLTON.

Mr. Jellicoe has this year a large number of very promising flowers. They are rather later than many collections I have seen, but will be none the worse on that account. At the earlier part of the season Mr. Jellicoe suffered very much from the damp, but at the present time they are quite free from it. His best blooms of Japanese are E. Molyneux, Mrs. F. Jameson, Condor, Stanstead White, Surprise, Criterion, and others, and of the incurved varieties Mr. Bunn, White Beverley, Lord Wolseley, Jeanne d'Arc, Refulgens, all the Queen family, Hero of Stoke Newington, Princess Teck, &c. Mr. Jellicoe is a thorough grower of the Chrysanthemum, having taken the silver cup twice at Liverpool, and other valuable prizes in all parts of the country.

LINGDALE LODGE, OXTON, CHESHIRE.

The residence of G. Cockburn, Esq., is about two miles from Birkenhead, and in Mr. Geo. Burden Mr. Cockburn has a gardener who can grow the Chrysanthemum to perfection. The Japanese varieties are all excellent, the se worthy of mention being Avalanche, Criterion, Stanstead White, Mrs. Wright, Belle Paule, T. Stephenson, J. Delaux, Mons. Bernard (extra fine), Etoile de Lyon, Fimbriatum, Duchess of Albany, Stanstead Surprise, Mrs. F. Jameson (grand), Mr. H. Whellam, &c. The incurved varieties are of the highest order, and never have I seen such a houseful staged, not a bad flower amongst them, and for size of bloom and petal they cannot be surpassed. The Queen family are perfection, and Beauty, Violet Tomlin, Princess Teck, Miss M. A. Haggis, Prince Alfred, Lord Wolseley, Mrs. Shipman, Princess Beatrice, &c. are good. From the last named Mr. Burden has a very pretty sport; it has the same build as the parent but the colour is a bronzy rose shading to yellow, and a beautiful bloom it is; it is quite distinct from Mrs. Shipman, and Mr. Burden will do well to take care of it. Mr. Burden is not so well known yet, having only exhibited three years, but with much success at Birkenhead, Liverpool, and last year at the great Centenary Show at Edinburgh, and is destined to soon take a foremost position; he is an enthusiast, and is well supported by his excellent employer, Mr. Cockburn. There are 450 plants grown, both on the pinched and the orthodox principle. The new varieties worth growing are Mr. E. W. Clarke, Maggie Mitchell, Marsa, Puritan, W. W. Coles. John Doughty is grand and Emily Dale Imp. is an improvement in size. Ada Spaulding is a Japanese incurved from an early bud, but may be better later.

DOVE PARK, WOOLTON.

Mr. Carling grows 300 plants, but unfortunately he had many of the most promising shoots broken by the severe gale we had just before they were housed, and the crippled shoots testify to the effects of the wind. Nevertheless, they are very fine, Edwin Molyneux, Mrs. F. Jameson, Florence Percy, Stanstead White, Stanstead Surprise, Condor (grand), Avalanche, F. A. Davis, Fimbriatum, Geo. Daniels, and Sunflower particularly so. The incurved and specially strong are Princess Beatrice, Violet Tomlin, Nil Desperandum, Refulgens, Miss Haggis the Queens and Tecks. Of Ada Spaulding it was too early to speak. Geo. Atkinson, Puritan (splendid), and Madame Louise Leroy, perhaps one of the best blooms in the collection, are worth growing in the Japanese. In the Anemones Nelson and Sabine, and the incurved Mrs. Coleman and John Doughty, were noteworthy. Mr. Carling has exhibited in various parts with much success, and will be seen again this year.

In conclusion I wish to state that what new varieties I have mentioned are thought worthy of being grown, not by myself alone, but by the growers whose collections they are in. The colour of the flower I have not described, as they are to be found in all good catalogues, and I would most respectfully ask those who by their courtesy and kindness have made the compiling of these notes a lighter task than they would otherwise have been to accept my warmest thanks.

CALDERSTONES.

In visiting Calderstones, Allerton, the residence of Mrs. MacIver, a few days ago, I was heartily welcomed by Mr. W. Tunnington, the popular gardener, who has presided over the gardens at Calderstones for a great number of years. As might be imagined at this season of the year, the first thing we conversed about was the Chrysanthemum. As we walked through the houses, where the Chrysanthemums were arranged, it was a treat to hear Mr. Tunnington relate some of his experiences; and, although not having been an exhibitor for some few years, there was the same master hand exhibited in their cultivation. Among the Japanese, which were very good, were the following:—Madame Louise Leroy, Etoile de Lyon, Avalanche, Mons. Bernard, Mons. H. Elliott, Marsa, Martha Harding, Mrs. W. Stevens, Stanstead Surprise, E. Molyneux, Sunflower, &c. Incurved: All the Princess of Wales type were very good, and Lord Wolseley, Refulgens, Mr. Bunn, and the Queen

family. In every department excellent order is maintained, and to see the *Eucharis* as grown by Mr. Tunnington, which comprise considerably over 100 large pots, is a sight which cannot be adequately described. Orchids, stove plants, Pines, and other fruit are exceedingly well done. In fact, the place is perfect, and cannot be fully entered upon in this article. It is with the *Chrysanthemum* Mr. Tunnington's name is most prominently associated, and he is certainly one of our leading authorities. He was, I believe, the first northern grower to ever contest at the London shows, and succeeded in 1880 in winning the Kingston cup and a valuable timepiece, his blooms at that time causing quite a furore. Besides that he has won the cup at Liverpool in addition to many more valuable prizes, and last year his paper at the Sheffield Conference was characterised as one of the best ever written. His manner is honest and straightforward, and his sound facts always command attention. I shall ever remember my visit to him, and trust that he may be long spared to attend as a judge of the flower he loves so well. He is engaged in that capacity this year at some of our principal exhibitions.—R. P. R.

CHRYSANTHEMUM SHOWS.

HAVANT.—OCTOBER 31ST AND NOVEMBER 1ST.

THE season's campaign opened in the pleasant Hampshire town above mentioned on the dates named. It was the seventh Show of the Society, and was held in the Town Hall. Although the exhibits were not quite so numerous as during the last two years, the quality left nothing to be desired, and the blooms throughout were remarkable for freshness and colour. Cut blooms formed by far the most important part of the Exhibition. The principal class was for twenty-four distinct varieties, half Japanese, the remainder incurved. A silver cup and substantial money prizes were offered in this class. Mr. Payne, gardener to Mrs. Ernald Smith, The Oaks, Havant, succeeded in carrying off first honours with a capital lot of incurved and Japanese, well staged. The varieties were:—Incurved: Golden Queen of England, Queen of England, Empress of India, Lord Wolseley, Prince Alfred, Miss M. A. Haggas, very fine; Refulgens, Jeanne d'Arc, excellent; Novelty, Princess Beatrice, Jardin des Plantes and Empress Eugénie. The Japanese were Madame C. Audiguier, Mr. R. Brocklebank, Avalanche, Edwin Molyneux, Stanstead White, Carew Underwood, Puritan, Gull, Mrs. J. Wright, Madame Baco, Mdle. Lacroix, Mons. Bernard, and Sunflower. Mr. R. Woodfine, gardener to C. P. Boyd, Esq., Emsworth House, Havant, was a good second, the Japanese being slightly superior to the incurved. *Etoile de Lyon*, *Criterion*, and R. Brocklebank were some of the best blooms. Mr. J. Agate, nurseryman, Havant, was third.

The next important class was that for eighteen blooms, distinct, nine incurved and the rest Japanese. There was only one exhibitor, Mr. Steptoe, gardener to R. Gale, Esq., Horndean, but he was deservedly awarded first honours for medium-sized even blooms. Five competed in the class for twelve distinct Japanese blooms. Mr. Payne followed up his previous success by securing the leading position with large, fresh, highly coloured specimens of Madame C. Audiguier, Avalanche, Edwin Molyneux, R. Brocklebank, Soleil Levant, Marguerite Marrouch, Stanstead White, Baronne de Prailly, J. Délaux, Madame B. Pigny, M. Bernard, and Mrs. J. Wright. Mr. Agate was a very close second, staging well. Especially good was Mrs. F. Jameson and M. Bernard. Mr. J. Parrott, gardener to Mrs. V. Smith, Woodlands, Havant, was third. For the same number of incurved Mr. Payne again received premier honours with medium-sized neat examples of Jeanne d'Arc, Empress of India, Queen of England, Lord Alcester, Alfred Lyne, Miss M. A. Haggas, Refulgens, Novelty, Mrs. Heale, Nil Desperandum, Jardin des Plantes, and Prince Alfred. Second, Mr. Woodfine. Third, Mr. Agate.

Anemones of the large section in twelve blooms, not less than six varieties, were well shown by Mr. Steptoe, Mr. Agate second, in whose stand two fine blooms of the new Gladys Spaulding were noticeable. This variety has a remarkably large bright yellow centre, with bronze lilac guard florets. In the Japanese Anemone class for twelve blooms in not less than four sorts Mr. Payne won another first prize, Jeanne Marty being especially good; Messrs. Agate and Steptoe followed, both staging well. Fresh blooms were forthcoming from the three exhibitors in the class for twelve reflexed, Mr. Woodfine leading the way with a handsome stand, Mr. Steptoe second, and Mr. Agate third.

Pompons, although not shown largely, were very good in quality. For twelve sprays of three blooms Mr. Agate was easily first, Mdle. Elise Dordan, Golden Madame Marthe, Prince of Orange, and the brilliantly coloured Eynsford Gem being the best. Mr. Agate had a magnificent stand of single varieties, undoubtedly the finest yet seen. Effie; Bessie Conway, a seedling, white ground, striped purple lilac, large, and most effective; Florence, deep blush, of charming form; Elegant, bronze yellow, thin petals, very effective; and Charming, yellow, cup shaped, were the most striking varieties.

Much the best bouquet of *Chrysanthemums* and Fern was shown by Mrs. Conway, a charming arrangement; Mr. Agate second. Single-handed gardeners and amateurs staged most creditable examples in their respective classes. For a group of *Chrysanthemums* in pots, arranged in a space of 40 square feet, Mr. Agate was easily first with well grown plants, carrying large blooms, mainly of Japanese varieties. Mr. Roberts, gardener to E. R. Longcroft, Esq., Hall Place, Havant, was second. Mr. Agate had the best table plants and Primulas.

Hardy fruit made a good display. Especially fine were the six dishes of Pears from Mr. Marriner, gardener to Colonel Thistlethwayte,

Drayton; as also were the six dishes of Apples from the same exhibitor, Cox's Pomona and Margil being extra fine. Mr. Gait, gardener to General Napier, Oaklands, had the best two bunches of black Grapes, Lady Downe's, good in all respects. Mr. Woodfine was second with Alicante. Mr. N. Fuller, gardener to the Right Hon. H. Matthews, Idsworth House, Horndean, staged a superior collection of nine sorts of vegetables, Cauliflowers, Tomatoes, Puritan Potatoes, and Beet being most noteworthy. Messrs. Ewing, Sea View Nurseries, Havant, arranged a fine lot of cut shrubs, "not for competition," which were much admired. Mr. Penford, gardener to Sir F. Fitzwygram, Bart., Leigh Park, Havant, staged two dozen good blooms of *Chrysanthemums*, for exhibition only. Mr. A. Chignell, the Hon. Secretary, deserves commendation for the admirable manner in which he managed this excellent Show.

KENT COUNTY.—NOV. 4TH AND 5TH.

THOUGH this is only the third season of the above Society it has established one of the leading Exhibitions of this popular autumn favourite in England. The keen competition in all the classes, of which there are fifty, and the quality of the exhibits are proofs of good management. Energy and spirit are thrown into the preparation of the schedule of prizes, which are of a substantial nature, and as a further stimulation the Society wisely recognise extraordinary merit by awarding an elegant framed artistic designed diploma where such merit is seen. Six were awarded this year, and the following were the fortunate recipients:—Mr. G. Newman for a magnificent hand bouquet; Mr. Blackburne for six Japanese blooms, Avalanche; and another to the same exhibitor for six *Etoile de Lyon*, the high colour of which has never been surpassed. Henry Finch, Esq., Hartley House, Cranbrook, Kent, also was awarded one for his collection of incurved and Japanese in the silver cup class; and Mr. Blick was awarded the sixth for the finest bloom of Mrs. Alpheus Hardy ever seen in this country, fully 7 inches across. The thanks of all are due to Mr. Needs and his able coadjutors (Messrs. Davis, Stevens, Jones, and others), who have laboured so assiduously to arrange and carry out such an admirable display as was to be found at the Rink, Blackheath, on Tuesday and Wednesday last.

Class 1, forty-eight blooms, twenty-four Japanese and twenty-four incurved, distinct.—First prize Centenary silver cup, value £10, and a money prize of £8. Second prize, £6. Third, £4. Fourth, £2. This inducement brought out five grand collections, remarkable for both size and finish, the premier position being awarded to Mr. J. Blackburne, gardener to John Scott, Esq., Elmstead Grange, Chislehurst, with incurved. Back row: Lord Wolseley, Queen of England, Violet Tomlin, Golden Queen, Golden Empress, Empress of India, Lord Alcester, Princess of Wales. Middle row: Jeanne d'Arc, Miss Haggas, Mr. Jay, Mr. Heales, Prince Alfred, Bronze Jardin des Plantes, Empress Eugénie, Jardin des Plantes. Front row: G. Glenney, Princess Beatrice, Princess of Wales, Lady Hardinge, Princess Teck, Mrs. W. Shipman, Nil Desperandum, and Mrs. Rundle. All the blooms in this collection were grand, Mr. Jay being, perhaps, the least desirable bloom, somewhat pointed, but fine for that old variety. Japanese: Stanstead White, Mons. Bernard, Fair Maid of Guernsey, Sunflower, Meg Merrilies, *Etoile de Lyon*, Ralph Brocklebank, E. Molyneux. Second row: Madame C. Audiguier, Boule d'Or, Baronne de Prailly, Avalanche, magnificent; Val d'Andorre, Mrs. J. Wright, Stanstead Surprise, Gloriosum. Front row: Thos. Stephenson, J. Délaux, Maiden's Blush, Sarah Owen, Mdle. Lacroix, Madam John Laing, Mons. H. Elliott, and Madame Baco. Many of the blooms in this collection were of such breadth that a great portion of their florets overlapped each other. Mr. Sullivan, gardener to D. B. Chapman, Esq., Downshire House, Roehampton, closely followed for second honours, his incurved were remarkably neat, and the Judges had to well consider them before the awards were made. So close were they, that by only one point Mr. Sullivan lost the premier award. His collection was composed of—Back row: Golden Empress, Prince Alfred, Empress of India, Emily Dale, Alfred Salter, Queen of England, John Doughty, Lord Alcester. Second row: John Salter, Miss A. Haggas, Lord Wolseley, Jeanne d'Arc, Prince of Wales, Violet Tomlin, Novelty, Mr. Brunlees. Front row: Mrs. N. Davis, Lady Harding, Mr. Heales, Refulgence, Hero of Stoke Newington, Jardin des Plantes, Nil Desperandum, and Princess Beatrice. Japanese—Back row: *Etoile de Lyon*, Boule d'Or, E. Molyneux, Stanstead White, Madame J. Laing, Val d'Andorre, Avalanche, Marguerite Marrouch. Middle row: Fair Maid of Guernsey, Mrs. F. Jameson, Madame Baco, Sarah Owen, Sunflower, Belle Paule, Mons. Bernard, Condor. Front row: Gloriosa, Dormillion, Eynsford White, Alpha, Mons. J. Laing, Mons. Garnar, Madame Lacroix, and Mr. H. Cannell. Mr. Edmund Whittle, gardener to C. H. Goschen, Esq., The Ballards, Croydon, was a really good third, and we believe he is almost a new grower, his Golden Empress being the premier bloom in the whole Exhibition. His Japanese were also highly creditable indeed. Mr. Coombes, gardener to W. Furze, Esq., Roselands, Teddington, fourth.

There were seven collections of twenty-four Japanese, distinct. Mr. Blick, gardener to Martin R. Smith, Esq., The Warren, Hayes, gained the first place with Stanstead White, Ralph Brocklebank, Baronne de Prailly, Mons. J. Pigny, Madame C. Audiguier, Edwin Molyneux, Sunflower, *Etoile de Lyon*. Middle row: Mrs. Falconer Jameson, Stanstead Surprise, Mrs. J. Wright, Mons. Bernard, Carew Underwood, Gloriosum, Avalanche, and Comte de Germiny. Front row: Mrs. Alpheus Hardy, the finest bloom ever seen in England; Golden Dragon, Madame John Laing, Mr. H. Cannell, Mrs. Beale, grand; Sarah Owen, Jeanne Délaux, and Florence Percy. Mr. Blackburne was second, and

Mr. John Doughty, gardener to Mrs. M. Tomlin, Angley Park, Cranbrook, Kent, third. For twelve Japanese, distinct, there were eleven competitors, each collection running very close. Mr. Blackburne was again to the front with Mons. Bernard, Sunflower, Edwin Molyneux, Etoile de Lyon, Meg Merrilies, Val d'Andorre, Avalanche, Ralph Brocklebank, Madame Baco, Mrs. J. Wright, Baronne de Prailly, and Gloriosum. Mr. Doughty was second, and C. E. Shea, Esq., Fooks Cray, Kent, third.

For twelve incurved, Messrs. Whittle, Briscoe, Ironsides, and M. A. Munnock, gardener to A. J. Scutton, Esq., Eagle House, Eltham, were placed first, second, and third in the order of their names. Mr. Whittle's collection were superior to the others, and consisted of Empress of India, Golden Empress, Queen of England, Lord Alcester, Alfred Salter, John Doughty, John Lambert, Lord Wolseley, Mrs. Shipman, Miss M. Haggas, Violet Tomlin, and Jeanne d'Arc. In the class for twelve reflexed, Mr. Joseph Mitchell, gardener to A. W. Arbuthnot, Esq., Bridgen Place, Bexley, Kent, stood ahead of the other fine boards with Golden Christine, King of Crimson, Mlle. Madeline Tezier, Garibaldi, Amy Furze, Pink Christine, Golden Christine, Peach Christine, Cullingfordi, Felicity, Cloth of Gold, White Christine. Mr. F. Moore, gardener to W. C. Pickergill, Esq., Blendon Hall, Bexley, and Mr. C. Holbrow, gardener to Major Budden, Banner Cross, Grove Park, Lee, shared second and third honours.

Anemones were well represented, and in the class for twelve Mr. Sullivan was awarded first position with Jean Marty, Mons. Pankouche, Sœur Dorothee Souille, Souvenir de Madame Blandineries, Nelson, Mr. Judge Benedict, Laing's Anemone, Gluck, Mons. Charles Lebocq, Marguerite Solleville, Lady Spaulding, and George Sand. Messrs. Mitchell and Moore were second and third respectively. For six blooms Queen family Mr. Chas. Cox, gardener to John Trotter, Esq., Brickenden Grange, Hertford; Mr. Whittle and Mr. Moore were placed in the order of their names.

In the class for twelve incurved, excluding the Queen family, there were five competitors. Messrs. W. Ray & Co., Sittingbourne, were placed first with a fine stand of the following:—Prince Alfred, Jeanne d'Arc, Lord Wolseley, Violet Tomlin, Miss A. Haggas, Alfred Lyne, Princess of Wales, Empress Eugénie, Lady Hardinge, Mrs. Heale, Refulgens, Mrs. W. Shipman. A very fine stand indeed. Mr. Doughty was placed second, and Mr. Shoesmith, gardener to M. Hodgson, Esq., Shirley, Croydon, third.

For six Japanese, white, Mr. Mitchell was placed first with Avalanche; Mr. Adlam, gardener to W. S. Milnes, Esq., Woodstock, Lee, second with Elaine; and Mr. Hazell, gardener to R. J. Mitchell, Esq., Bickley Park, third with Avalanche. For six Japanese, yellow, the first award fell to C. E. Shea, Esq., for magnificent blooms of Sunflower; and the second and third prizes were awarded to the same variety, Messrs. Mitchell and Payne being the prizetakers in the order of their names. In the class for six Japanese, any variety, no less than thirteen varieties were staged. Etoile de Lyon, from Mr. Mitchell, was a good first; and Edwin Molyneux, from Messrs. Doughty and Shea, was second and third respectively. Six incurved, one variety, Mr. White staged six as even blooms of Golden Empress that was ever staged, to which a first prize was deservedly awarded. Messrs. Hazell and Papworth received second and third honours, but a long way behind the first prize stand. Ten exhibitors staged Avalanche. In class 44 Messrs. Blackburne and Doughty were first and second respectively, both running each other very close for first place. For eighteen Japanese, distinct, Mr. Blackburne again takes the leading place with Mons. Bernard, Sunflower, Edwin Molyneux, Avalanche, Ralph Brocklebank, Etoile de Lyon, Stanstead White, Stanstead Surprise, Gloriosum, Val d'Andorre, Sarah Owen, Mrs. J. Wright, Thos. Stevenson, Fair Maid of Guernsey, Baronne de Prailly, Meg Merrilies, Madame Bacco, Madame John Laing. Mr. Blick received the second prize with an attractive collection, and Mr. Leadbetter third, all exhibiting well. In the corresponding class for twelve Messrs. Hazell, Barnes, and Skinner were placed in the order of their names, the varieties being similar to the foregoing classes.

For twelve incurved, distinct, Mr. Whittle was well ahead with Queen of England, Golden Empress, John Lambert, Lord Alcester, Lord Wolseley, Alfred Salter, Empress of India, John Doughty, Miss M. Haggas, Violet Tomlin, Jeanne d'Arc, John Salter. Mr. Barnes, gardener to A. Bovell, Esq., Grove Park, Lee, was placed second; and Mr. Leadbetter, gardener to A. G. Hubbuck, Esq., Chislehurst, third.

Amateurs, twenty-four blooms, twelve Japanese, twelve incurved, distinct, silver cup, value £5 5s., presented by Mr. Norman Davis, Camberwell, brought out a good competition, and Henry Fincham, Esq., Hartley House, Cranbrook, was deservedly awarded the first prize with incurved Prince Alfred, Jeanne d'Arc, Violet Tomlin, Princess of Wales, Mrs. Heale, Princess Beatrice, Miss Haggas, Refulgence, Nil Desperandum, White Venus, Lord Derby, Mrs. Haliburton. Japanese: Mons. Bernard, Comte de Germiny, Carew Underwood, Etoile de Lyon, Mrs. F. Jameson, Edwin Molyneux, Avalanche, Madame John Laing, Val d'Andorre, Mons. Bacco, Baronne de Prailly, and Sunflower. W. G. P. Clark, Esq., 10, Fishpond Road, Hitchin, was placed second; and Dr. George Walker, Wimbledon, third. This was a highly attractive class, and in no way inferior to the open classes.

There were several collections staged for the class of eight incurved, eight Japanese, and eight reflexed, Messrs. Blackburne, Mitchell, and Moore being placed in order of their names for collections that could be scarcely surpassed. A large competition of hand bouquets, épergnes or vases, and baskets of flowers.—Mrs. Newman, first; Mr. R. Chard,

second; and Mr. Nunn, gardener to J. Soames, Esq., Greenwich, third for épergnes or vases. For bouquets, Mr. G. Newman, first; Mrs. Jones, second; and Messrs. Perkins, Coventry, third. Mr. C. Davis, jun., a lad only eleven, also secured two prizes in the amateur classes for six varieties. Groups were well done, and several collections staged. Mr. J. Payne, gardener to T. Williams, Esq., Lewisham Park, first. The flowers were of massive substance, and contain a plentiful sprinkling of the Queen family, and other well known exhibition varieties with good foliage. Mr. James Hudd, gardener to J. W. Prior, Esq., was placed second with slightly dwarfer plants, Etoile de Lyon being very conspicuous in his collection. Mr. T. Dobson, gardener to F. P. Preston, Esq., South Bank, Blackheath, third with fine flowers.

Miscellaneous groups were set up by Mr. Mullins (gardener to W. Strong, Esq., Blackheath), Mr. Hudd, and Mr. Jeffrey (gardener to Mrs. Crundall, The Moat, Eltham), who were placed in the order of their names for light and graceful arrangements. Mr. Jones, Hither Green Lane, exhibited a pleasing group not for competition, and Messrs. Laing & Sons a highly attractive collection of fruit. Altogether a magnificent display was provided, of which Kent may be well proud, and which was admired by a fashionable company.

SURREY.—NOVEMBER 3RD AND 4TH.

ALTHOUGH the above named Society has adopted a county name, only a moderately attractive display was made in the Peckham Public Hall on Monday and Tuesday last, which, however, brought a good company of visitors, so that we hope that the Society will be benefited and obtain new subscribers, as the total income last year from all sources was only £43. This is small for the thickly populated district in which the Show is held. A little more energy and spirit is required all round so to bring exhibitors from a greater radius, but praise is due to those who did compete, especially in the group class, for several very tastefully arranged groups furnished the sides of the spacious hall. Mr. Witty, Superintendent of Nunhead Cemetery, took the premier position with a group occupying a space of 100 square feet. Mr. Elson, gardener to M. Peate, Esq., Loughborough, received second honours, and Mr. Dominy, Nunhead, third. Smaller sized groups were staged by Messrs. Bolton and Snoad, who were first and second respectively.

Mr. Elson secured the first prize for twenty-four cut blooms, and the National Chrysanthemum Society's silver medal. His twelve Japanese were creditable, but the stand of incurved was not far enough advanced. He was the only exhibitor in this class. Messrs. Lindsay, Falkner, Vaughan, Worley, and Strudwick shared the honours in the other cut bloom classes, which contained nothing special.

Table plants were very graceful, Mr. Elson securing two first prizes for very pretty collections. Mr. Bennett received two first prizes for bouquets. Mr. Major, a local nurseryman, exhibited some very fine Gros Colman Grapes, grown in the neighbourhood. Messrs. Laing of Forest Hill, and French of Camberwell, staged groups not for competition.

IPSWICH.—NOVEMBER 4TH.

WITHIN the past few years the Ipswich and East of England Horticultural Society has developed into one of the best horticultural organisations in the eastern counties. This has been accomplished mainly by the influence of the Honorary Secretary, the Rev. H. Berners of Harkstead Rectory, who is widely and well known as an enthusiastic and skilful amateur horticulturist. Both the summer and autumn shows are now very creditable displays, but the progress made with the Chrysanthemum Show is especially notable, and on the occasion of that held on Tuesday last the advance was most marked, for, as some have expected, the early exhibitions are securing many fine blooms that would have been too late for the second week dates. The Public Hall at Ipswich is a spacious lofty building, light and well adapted for a show of this character, the large hall being devoted to Chrysanthemum groups, plants, and cut blooms, with a few miscellaneous groups, while a large room adjoining contained the fruit, of which Grapes, Apples, and Pears were exceedingly well represented. In the hall the arrangements were good. Upon a stage at one end the specimen plants and miscellaneous groups were placed, and in front of these the groups of Chrysanthemums had a very bold effect, others being round the sides of the building, and the cut blooms were placed upon two long tables extending the whole length of the building. We can only refer briefly to the principal exhibits this week, as the demands upon our space are so great.

CUT BLOOMS.—These constituted an important portion of the Exhibition. The competition was very keen, and the Judges (Messrs. G. Gordon and Lewis Castle) had a considerable task in several classes to determine the relative positions of the exhibitors. In the open classes Mr. H. Lister, gardener to Lord Brooke, Easton Lodge, Dunmow, Essex, was the most successful competitor, staging handsome blooms, both of incurved and Japanese, which secured the premier awards in the two leading classes of the Show, repeating the success that he has for several years gained at Ipswich. With twenty-four cut blooms, twelve incurved and twelve Japanese, distinct, there were eight competitors, and Mr. Lister was first with substantial, well-finished examples of the following:—Incurved, back row: Lord Alcester, Queen of England, Golden Empress, Empress of India. Middle row: Jeanne d'Arc, Emily Dale, Alfred Salter, Lord Wolseley. Front row: Prince Alfred, Mrs. Heale, Refulgens, Empress Eugénie. Japanese, back row: Avalanche, Sunflower, Condor, Mrs. Wheeler. Middle row: Ralph Brocklebank, Meg Merrilies, E. Molyneux, Madame C. Audiguier. Front row: Pelican, Mrs. F. Jameson, Blanche Pigmy, Criterion. The second place

was secured by Mr. W. Dance, gardener to Mrs. Lowe, Gosfield Hall, with very handsome Japanese and even clean incurved. Third, R. C. Notcutt, Esq., Anglesea Road, with good Japanese and even, but small, incurved. Mr. Notcutt was, however, very successful in other classes, and evidently pays much attention to his Chrysanthemums with good results.

Mr. Lister was again first for twelve incurved, showing good blooms of Golden Empress, Empress of India, Lord Alcester, Prince Alfred, Emily Dale, Jeanne d'Arc, Lord Wolseley, Empress Eugénie, Mrs. Heale, Princess of Wales, and Miss Haggas. Messrs. Dance and Messrs. Saltmarsh & Son, Chelmsford, followed in the order named.

Amongst seven competitors with twelve Japanese, Mr. M. Chenery, gardener to J. Limmer, Esq., Woodside, was first with beautiful examples of Maiden's Blush, E. Molyneux, Avalanche, Etoile de Lyon, Comtesse de Beauregarde, Sunflower, Val d'Andorre, Lady T. Lawrence, Oracle, Madame C. Audiguier, Boule d'Or, M. Baco. Mr. Notcutt followed closely, only losing first place by a point or two in an imperfect Etoile de Lyon. Sunflower and Soleil Levant were very fine. Mr. Lister was third.

Five competitors entered in the amateurs' class for twenty-four cut blooms, twelve incurved and twelve Japanese. W. H. Lees, gardener to the Duchess of Montrose, Sefton Lodge, Newmarket, took the lead with deep handsome blooms of incurved. Back row: A fine example of Alfred Salter (silver medal as the best bloom in the amateurs' classes), Emily Dale, Prince Alfred, Queen of England. Middle row: Jeanne d'Arc, Lord Alcester, Empress of India, Lord Wolseley. Front row: Nil Desperandum, Princess of Wales, Refulgens, and Miss M. A. Haggas. The Japanese were not so good, the varieties being Etoile de Lyon, Ralph Brocklebank, E. Molyneux, Fair Maid of Guernsey, Thunberg, Madame C. Audiguier, Comte de Germiny, Avalanche, Soleil Levant, Madame Laing, Madame B. Rendatler, and Blanche Pigny. The second prize went to A. D. Helford, Esq., Great Bergholt, who had even, well balanced blooms of both incurved and Japanese, and he lost the first place by very few points. The Rev. H. Berners was third with another meritorious stand, the blooms even, clean and bright throughout.

In other cut bloom classes the Rev. H. Berners was first for six crimson reflexed, staging beautiful examples of Cullingfordi. For reflexed and Anemones Mr. Notcutt won the chief place with excellent blooms, Messrs. Lees and Dance also showing well. The best plants were in the groups, and those with which the Rev. H. Berners secured first honours were admirable, bearing large richly coloured blooms, E. Molyneux, Val d'Andorre, and Meg Merrilies being very notable for their size and colour. The Hon. W. Lowther, M.P., followed, and Dr. R. Casley was third. The two leading miscellaneous groups were from Messrs. Caldecott and Gilbert, who were first and second respectively, both tasteful and effective. The most successful exhibitors of fruit were Mr. Sheppard, gardener to Captain Berners, Woolverstone Park, Ipswich, and Mr. Rogers, gardener to Lord Rendlesham, Rendlesham Hall, who had excellent samples of Grapes. Baskets of flowers, bouquets, and stands of flowers were also well shown. The Committee and supporters of the Society have every reason to be satisfied with their work, and the public of Ipswich signified their appreciation by attending in large numbers.

BRIXTON AND STREATHAM.—NOVEMBER 4TH AND 5TH.

FOR a number of years the Brixton Chrysanthemum Society has been famed for its annual shows in the school room behind the church near the top of the hill, but this year larger and more imposing quarters were engaged for what proved to be one of the most satisfactory exhibitions this Society has ever held. The Public Hall near Streatham station was devoted to the exhibits, and for general quality and effect we have never seen a show of similar size to equal this. Specimen Chrysanthemum plants, Ferns, and foliage plants, Orchids, and Primulas, besides a delightful display of cut blooms in all the sections, with fruit and vegetables as usual, constituted an exhibition with which the district, the Society, the Committee, and the courteous Secretary, Mr. John Salter, had just cause to be amply satisfied. The fittings of the hall, the general elegance, the tables covered with red baize, and the tasteful arrangement, left nothing to be desired, and it is to be hoped that an abundant attendance of visitors completed the satisfaction of all concerned.

Turning to the cut flowers first it may be noted that the general quality was very satisfactory, and it is surprising how close some of the competitors' collections are in merit. With twenty-four Japanese Mr. T. Mursell, gardener to Mrs. Burton, Tower House, Leigham Court Road, was first with handsome blooms of the following:—Back row: Etoile de Lyon, Sunflower, Fair Maid of Guernsey, E. Molyneux, M. J. M. Pigny, Gloriosum, Mrs. Clark, Stanstead White. Middle row: Ralph Brocklebank, Maggie Mitchell, Charles Sharman, Belle Paule, Val d'Andorre, Mrs. Thomson, Golden Dragon, Stanstead Surprise. Front row: Avalanche, L'Adorable, La Triomphante, Mrs. F. Jameson, Elaine, Comte de Germiny, Mrs. Alpheus Hardy, and Boule d'Or.

Mr. Mursell was also awarded the Centenary bronze medal of the National Society for this collection, and he was followed by Mr. W. Howe, gardener to H. Tate, Esq., Park House, Streatham; and Mr. S. Ashby, gardener to B. H. Holman, Esq., Leigham Court Road. For twenty-four incurved Mr. Howe took the first place, showing excellent blooms of Golden Empress, Empress of India, Violet Tomlin, Emily Dale, Alfred Salter, Lord Alcester, Princess of Wales, John Salter,

Jeanne d'Arc, Lord Wolseley, Princess Teck, Jardin des Plantes, Beauty, Miss Haggas, Barbara, and Prince of Wales.

In the specimen plant classes Messrs. Clarke, Cherry, and Weston were the chief exhibitors, while in fruit Messrs. Howe, Wiggins, Pearce, Guyett, and Bonnewell secured the leading prizes.



FRUIT FORCING.

VINES.—*Earliest.*—For affording ripe Grapes in April the Vines, whether in pots or planted out, must now be started. Bottom heat in neither case is indispensable, though in all forcing operations it hastens growth considerably, therefore in forcing Vines in pots place fermenting materials in the pit in which the pots are stood on pedestals of loose brickwork, being careful not to allow the heat about the pots to exceed 70° to 75°. Suspend the Vines in a horizontal position over the fermenting material to insure a regular break. Syringe three times a day, keeping every part of the house moist by sprinklings in bright weather. Vines started at this season require a higher temperature to excite the buds than those started later. A temperature of 50° to 55° at night and 60° to 65° by day will not be too much to start with. Where no fermenting material is used sprinkle the floors and other available surfaces, but not the Vines, with guano water, 1 lb. to twenty gallons of water, or the drainings of stables diluted with six times the quantity of water at closing time two or three times a week.

Early forced planted out Vines should have the border, or preferably the pathway or floor of the house if convenient, covered with 2 feet depth of leaves and stable litter in a state of fermentation, occasionally turning the material, as the ammonia given out is very beneficial to the Vines, and a moist genial atmosphere maintained with regularity. The inside border should be soaked with water or liquid manure at 90°. Outside borders must be attended to; if fermenting materials are not obtainable cover with a good thickness of leaves, with tarpaulin, shutters, or lights to throw off rain or snow.

Houses for Starting in December.—The pruning must not be further delayed, as it induces rest, and the Vines are not so liable to bleed. Dress the cuts with styptic or knotting as a safeguard. In pruning two eyes are ample for affording useful bunches, but Vines that do not afford bunches as large or so freely as desired should be allowed more buds, four to six, according to their vigour, yet with the wood stout and short-jointed the close pruning will mostly afford the most satisfactory results, as what is gained in size of bunch is lost in size of berry, compactness of bunch, and good finish. A good useful bunch of well-coloured thoroughly ripened Grapes is always appreciated, therefore aim at that, as size, whether of bunch or crop, is quite secondary. Dress the Vines, cleanse the house, having all in readiness through cleanliness and good order for a start at the proper time.

FIGS.—*Early Forced Trees in Pots.*—Where these have been placed outdoors they should be taken under cover to protect them from the cold autumn rains. It is presumed that the trees have been top-dressed, repotted, or had the drainage rectified, as advised in a former calendar. The trees should be placed in a rather dry, well ventilated house. Any thinning or shortening of crowded or attenuated growths should be attended to, and the trees dressed with an insecticide; but they must first be washed with tepid softsoap solution, 8 ozs. to the gallon of water, using a somewhat stiff brush, especially if scale has been or is present, following with the same, to which sulphur has been added to bring it to the consistency of cream, being careful not to damage the points of the shoots and the embryo fruit.

Ripe Figs early in the season are a necessity in most establishments, and are not difficult to obtain; but a light well ventilated house is necessary, with the command of plenty of heat, having pits containing fermenting materials to afford bottom heat to stimulate the roots and assist in their feeding. The Fig requires good support, trees in pots needing abundance of liquid manure when growing, the trees being most prolific under limited root space. One of the great advantages of Fig culture in pots is the supply of occasional dishes from a few trees, a number of varieties being readily grown in a house of moderate dimensions, and which if forced come in at a time when the dessert is not too varied. Brown Turkey is the best of all Figs for any purpose and the best white is White Marseilles. Angelique, Col de Signora Bianca (flesh red), Pingo de Mel, and St. John's have yellowish or white flesh; and Black Ischia, Black Marseilles, Brown Ischia, Dwarf Prolific, Early Violet, Boudance Précoce, Col de Signora Nera, Brown Ischia, Violette de Bordeaux, and Negro Largo are good dark Figs for pot culture, affording a long succession.

Early Forced Planted out Trees.—Untie these from the trellis and prunethem. Those with the roots restricted to small borders will require the shoots thinned where too crowded, but those not having the roots restricted will need a hard pruning at the upper part of the

trellis, cutting back those shoots that have reached the upper part of the trellis or limit, to where the succeeding shoots start. Remove any elongated spurs, reserving such as are short-jointed and fruitful. The house should be thoroughly cleansed, washing the woodwork with hot water; washing the walls afterwards with quicklime and sulphur. Wash the trees with soapy water, and afterwards dress with an insecticide. Then secure the trees to the trellis, allowing room for the growth of the branches, forking the surface of the border slightly, remove the loose material, and apply a top dressing of short partially decayed manure about 2 inches thick, and if dry afford a good watering. Ventilate freely at all times, except when frost prevails, which is best excluded, employing no more artificial heat than is necessary.

Succession Houses.—Prune and cleanse the trees without delay, especially where insects have obtained a footing. Complete any lifting, root-pruning, &c., remembering that Figs with the roots restricted or limited to a somewhat small area are more manageable and fruitful than those with an unlimited root area. Any unfruitful trees should be rather severely root-pruned, and the roots restricted to moderate sized borders, depending more on active feeders near the surface, encouraged by mulching, than a large extension of roots.

PINES.—Afford liberal ventilation to houses or pits containing young plants whenever the weather is favourable, as keeping the houses constantly closed and saturated with moisture is more injurious than beneficial. Water will not be required frequently, yet the plants must be examined every ten days, watering such as require it, as too great dryness is more injurious than is credited. In the fruiting department lose no opportunity of closing the house at 85°, keeping the night temperature at 70°, or a few degrees less in cold weather. Remove all the superfluous suckers, retaining one only, the best on each plant. Suckers on successional plants that appear before the fruit is visible should be removed, unless an increase of stock is urgent. At this time of year it is usual to make new beds of fermenting materials for the young plants. Tan is unquestionably the best material, a good substitute being found in Oak or Beech leaves, which should be collected as dry as possible. In forming beds of leaves they should be firmly pressed; tan, on the other hand, should be placed lightly together.

CUCUMBERS.—Secure to the plants a regular temperature of 70° at night, 5° less on cold nights, 70° to 75° by day, advancing to 80° or 85° with sun heat. Admit a little air at the top of the house whenever the weather is favourable; but it must always be done without lowering the temperature, it being better to shut off the top heat for an hour or two when the sun is powerful than to admit air when the winds are sharp and cold. Judicious and moderate ventilation is, however, beneficial in carrying off steam or accumulated moisture, and in imparting flavour to the fruit. The syringe may be laid aside except for damping the walls, paths, &c., in the morning and afternoon in warm, bright weather, keeping the evaporation troughs filled with liquid manure. The water or liquid manure given to the roots must be of the same temperature as the house, as also must the soil that is added to the beds.

Encourage the autumn fruiters now in full bearing with copious supplies of liquid manure, not too strong or too often, taking care to avoid overcropping by removing the fruit as soon as it is full-sized for table, and all deformed fruit when seen. Go over the plants at least once a week for the removal of bad leaves, stopping one joint beyond the show of fruit, cutting away superfluous growths.

Winter fruiters should not be allowed to fruit now, or their energies will be so impaired that they will not show and swell fruit at the new year onwards; therefore let them advance well up the trellis before stopping, training the side growths evenly and not too thickly, as it is important that the foliage have good exposure to light and air. To impart vigour to the main branches stop at a few joints of growth. If fruit must be had stop at one or two joints beyond the show of fruit, allow few male blossoms and no tendrils, removing them as fast as they appear, and add fresh warmed soil as often as the roots have fairly covered the surface of the bed. If mildew appear dust with flowers of sulphur, and subdue aphides by frequent but moderate fumigations with tobacco. Red spider will not give trouble if an ammonia-charged atmosphere is maintained; but it must not be too strong, and thrips are evidence of too dry an atmosphere.

PLANT HOUSES.

Crotons.—Where a sufficient stock of young plants has not been prepared, well coloured side shoots may still be rooted singly in small pots. The shoots must be cut off where the wood is soft, and then they will root quickly in brisk heat. If the wood is hard they will be a long time before roots are formed at this season of the year. Plants that are well coloured and large enough for the purpose for which they are required should be kept where the temperature is 55° to 60°. This will prevent their making fresh growth, which would spoil their appearance, for the majority of varieties will not colour foliage made after this date. Plants that it is intended to grow into larger specimens next year should not be confined at their roots. These will produce abundance of fresh roots, and be in the best possible condition for making free growth early in the year. Plants from which heads and side shoots have been removed may be cut back a few joints, and thoroughly washed with petroleum and water, one ounce to the gallon. This will free them from scale if any exists upon them. The small scale to which these plants are subject can be readily destroyed by one or two applications when they have no young tender foliage upon

them. If the stock plants are clean, Crotons should be grown to the size they are required without recourse to sponging, which, however carefully done, is sure to injure the foliage to a certain extent. Stock plants that are slightly pruned back will soon burst fresh growth buds, when they may be potted if confined at their roots. With plenty of active roots and a moderate amount of root room the cuttings will be free and vigorous in comparison with those from plants that have been pot-bound for some months. Plants that have growths upon them and are intended for the same purpose may also be potted, and what are only small shoots now will be well developed shoots in spring. Keep the temperature for the general stock of these plants from 60° to 65° at night according to the weather.

Dieffenbachias.—Potting is often discontinued when autumn arrives, but it is a great mistake when the object is to advance the plants. Plants that need larger pots at the present time will be seriously checked if left until the turn of the year. Repot those plants that need more root room, and although growth will be slow they will make roots freely, and be ready for potting again towards the end of January. Plants that have become tall may have their tops taken off, and will root freely in brisk heat. Cuttings with bold foliage at the top will make large plants quickly in spring. If the old stems are required for stock stand them amongst other plants in a heated structure until after the new year, when they may be cut into lengths and placed into pans or boxes.

Dracenas.—Those that it is necessary to grow into larger plants whether warm or cool varieties, should not be confined at their roots. Those raised from the stem during May and June may be placed into 5 and 6-inch pots; while those raised later may be placed into 4-inch pots. If they are to be used for decoration in these sizes when ready surface some with Selaginellas, others with a few seedling Ferns, and others with a mixture of both and *Panicum variegatum*, small rooted pieces of the latter should be used. This adds materially to their beauty when used singly in vases. Plants of large growing kinds that are well rooted in 6-inch pots may be placed into 8-inch. To do these plants well they should never be confined at their roots until they have been given their final shift.

Gardenias.—Those that are well rooted in thumbs may have their points removed, and be placed into 4-inch pots. If kept in brisk heat they will be bushy little plants by spring. Plants that are swelling and forming their flower buds should be kept in a temperature of 60° to 65° at night. Do not allow them to become dry at their roots, but water them carefully, and avoid giving them cold water, strong stimulants, or syringing them with strong insecticides, or else the flower buds will be deformed and fail to give satisfaction. A check from any cause should be avoided, and the roots kept active if large bold flowers are required.

Poinsettias.—Plants that have commenced to develop their bracts should be grown in a temperature of 65° until they are thoroughly developed, when they can be carefully hardened and used in any position. Give these plants weak stimulants every time water is needed, or better still, apply a little artificial manure to the surface of the soil about once a week. Do not keep later plants in a higher temperature than 58° at night. Nothing is gained by hurrying these and *Euphorbias*, for they will be invaluable during December and until the end of the year.

Allamandas.—Keep plants that are growing in a temperature of 60° to 65°, and encourage them by giving weak stimulants frequently. Top-dress the plants with manure if confined at their roots; they will soon take possession of it, and flowers will be produced freely for some time to come. Keep perfectly dry plants that are to be starting into growth towards the end of next month. They should not be in a lower temperature than 50°.

Pandanus Veitchii.—Strong suckers may be taken off and inserted in small pots. Place a little sand at the base of each, and stand them in any warm house; it is not necessary to place them in the propagating pit, for they root equally as well outside. Those that are growing too large for 5, 6, and 7-inch pots may be placed into 10-inch. Plant the surface of the soil with *Nephrodium molle*, or small pieces of *Microlepia hirta cristata*. Either look well, and add wonderfully to the appearance of these plants when used in large vases singly. The variegation of the plant is shown to perfection with a groundwork of green beneath. However carefully Mosses and Ferns may be arranged about the base of the plant, they never look so well as when they have grown naturally in that position. This plant bears room decoration well, and may be kept in for three or four weeks at a time without injury. The Ferns may suffer slightly, but both are free growers, and a few weeks in a warm house are sufficient to restore them again to health.

Acalyphas.—Root singly in small pots a number of cuttings ready for growing in spring, or to form good heads for re-rooting. These are useful plants for table, room, or conservatory decoration. They grow readily, and colour beautifully if exposed to the sun. They are probably best grown on a single stem for most purposes, but handsome bushes can be formed for large vases by inserting four or five cuttings in a pot and growing them together without pinching until they are 18 inches high. When the plants begin growing keep them separate by placing a stake to each, so that the leaves will form naturally round the stem. If good tops are used for cuttings the lower leaves will arch gracefully downwards and half hide the pots. Where small cuttings are used the plants can be potted down without injury, for they root freely from the stem.

THE BEE-KEEPER.

APIARIAN NOTES.

THE WEATHER.

ALTHOUGH October was somewhat frosty, and the temperature was down to 20° on the 28th, the bees have carried more pollen and on more days than I ever experienced during the same month. Previous to the rain on the 27th, and as is usually the case, the birds have made havoc with the Currant and Gooseberry buds, being about ten days earlier with the devastation than the average of years.

PREPARED FOR WINTER.

Owing to the protracted season I was a little later in getting my hives prepared for the winter's campaign. But they are now completed, and stand either in outside cases with dry hay between and over the hive, or with several folds of sacking on the sides and hay on the top, with an oilcloth projecting well down the sides, and covering part of the stand. The semi-circular roof of galvanised iron throws the drip well off the sides, and protects both front and back from rain. This porch gives most freedom and protection, with least obstruction to the bees. If I had a new term of a bee-keeping life to begin, this would be the only form I would adopt. It is not only the handiest but is the cheapest to begin with, and costs less at first than any other system ever devised, and the hive proper will last far longer than double cased ones, or outside cases.

DYSENTERY.

As dysentery is brought on by damp hives, and the honey absorbing an undue quantity, owing to the form of hive and mode of management, our bees have an entire immunity from that disease. Costiveness is a common occurrence amongst bees that have nothing but Heather honey and abundance of pollen. This costiveness has been termed dysentery by some writers, whereas it is simply the opposite, and occurs amongst the most healthy bees. To prevent it I allow a few pounds of beet sugar dissolved in its own weight of water. That has now been supplied to nearly all of them, and I have no dread of an Arctic winter injuring the bees in the slightest.

Dead bees on the floor are a frequent annoyance to some; that, as well as detachments of bees dying, are unknown in my apiary.

MICE IN HIVES.

The present month is the one when mice are seeking for winter shelter and take readily to hives. They kill the bees by eating their heads and thorax, and their offensive odour is abominable and injurious to bees; they ought to be well guarded against. With very narrow entrances they are kept outside, but sometimes they nestle in the wrappings and eat into the hives. To prevent this traps or poison should be used, as hives seldom rally from the injury of mice. The slide of perforated zinc, as used by Wm. Hogg, Castle Douglas, is an effectual plan of keeping them from entering the hive by the doorway, but it has the same evil effect as it has in the other ways it is applied in bee management, by hindering the bee's exit and return at a time when it is most desirable they should have free egress and ingress to and from their hives.

EKES DURING WINTER.

These ekes, or "raises" as they were termed, belong to the Stewarton method, but they have the fault of drawing damp, which cools the bees before leaving the hive, and being so much below the comb many bees get chilled on their return before they reach it. The ventilating floor fully obviates these inconveniences, and preserves the bees, as the moment they leave the non-conducting comb they are outside, and having little or no toilet to perform evacuate while on the wing, and return in a vigorous state to the hive without any delay or much loss of heat. In cases where (from want of better resources) it is necessary to use ekes, always

place a bit of fresh comb a little beyond the entrance, so that the bees can avoid the damp and conducting sides of the eke, and reach the combs and cluster in safety when the sun is low and the air chilly.

PREPARING FOR SUMMER.

Bees should now require no more attention, that is, provided they are wind and water tight with sufficient stores, till the months of April or May, beyond an occasional look to see all remains as they were prepared. Everything required for next summer should be overhauled and put in readiness when required. As our swarms were not numerous this year, the frames we deprived the bees of filled with Heather honey, will be the only ones requiring foundation, these prepared last year being still in readiness and in order. I will not touch nor overhaul them until May, but will then go over every one, and remove all traces of the spiders' webs; between them and the earwigs they keep the moths down, so I rather encourage the former, and have no trouble with moths in my hives.

I have disposed of all my prize hives, and may, if the year be good, require a few of the cheap sort to take their place, being in reality the best hive for all purposes, although it has not been the greatest prizewinner. As these additions will be for swarms, only two divisions and stand, if supers are excepted, will complete the hive; no outlay whatever will be made but what is necessary. The floors being for summer work only will be made on the cheap, and without feet. When so made they do not oscillate so much when in transit on a vehicle as with feet, however short they may be, and can, if required, be piled two tier, thereby getting more hives to their site at the Heather in a shorter time and at a cheaper rate than when fewer have to be taken. The stand will, with the exception of one of the sides being in two pieces, which I will hereafter explain, and minus the feet, be the same or similar to the complete floor and stand.

It consists of a rim of five-eighths wood from 4½ to 6 inches broad, having a sheet of perforated zinc the full size of the stand upon the top edge. One of the sides will be in two pieces, which combined, will measure about an inch less than the full breadth, leaving an opening nearer the bottom than the top of about an inch wide. The under rail being a little narrower than the upper a fillet of wood will be required all round on the inner side of the stand, so that the shutter or false floor comes flush with the under edge of the upper rail, when another fillet at each side of the shutter is nailed to the stand at an angle, so that when the shutter is down it admits air, and can be caught hold of to raise it to its place when to be shut or when to be drawn out. It will be observed the two under fillets keep the false floor at its place at the back, and a button keeps it up when closed. This arrangement of the floor makes it handy for those who keep their bees in houses, and is much easier kept free from debris than when feet are added, as there is no obstruction to prevent its easy removal or replacing, while its cheapness and the simplicity of its make recommend it.

AMERICAN IDEAS.

Ever since a correspondent advised me to read the American journals I have endeavoured to do so, and get any benefit likely to be derived from those go-ahead people. Owing to my absence so long at the Heather, I am still a long way behind with correspondence and reading, and have only received the August number of "Gleanings," which contains the only bit of information worth knowing. A considerable time was spent and paper wasted both in this country and America discussing the theory that compression was necessary to produce workers from the egg that is naturally a drone egg, or rather what would without fertilisation produce a drone. Then others maintained that it was the bees that had the power of changing the sex. The Editor of "Gleanings" appears to have the weakness of leaning to that side, but let his own words speak for him. He says, "For instance, if you take a frame of worker comb containing eggs in worker-cells and nothing else, and put it in a queenless hive, more or less drones will be found

emerging from worker-cells, whereas had the frame been left in the hive where the eggs were laid there would have been no drones at all." I must take in the whole sentence as my text, but must lay considerable stress upon the last clause, "there would have been no drones at all." Your bee-keeping readers, as well as naturalists, will observe that there is something extraordinary, if not prophetic, in the statement, the text tells us so, and the context confirms it. Bees sometimes make what we consider a mistake in rearing a royal cell round a drone larva, but I have never witnessed the same lavish expenditure of wax upon the drone-royal cell as when it contained a queen. I have often found workers in queen cells, but they were never matured, too long perhaps in being selected for transformation, and I have repeatedly had perfect queens from ordinary looking worker cells, and I am informed that the Punic bees raise queens sometimes in the same apparent manner as are drones, and as many as 500 at one time.

But how does the editor of "Gleanings" know that if the frame of comb had been allowed to remain in its original hive "there would have been no drones at all." It will, perhaps, be as well to leave the editor of "Gleanings" alone in his profound knowledge of the past, present, and future, and tell your readers how the drones came there. For aught any of us know the eggs of what matured into drones might have been in these combs from the first, as queens can, and do sometimes when fertile, lay drone eggs in worker cells, and sometimes fertile workers are present and at work at the same time as the queen regnant. Moreover, it sometimes happens that queenless hives are entirely destitute of an egg-laying bee, and sometimes they have them, so there is no mystery whatever in finding drones coming forward in a queenless hive, nor is it a miracle to find sometimes an effete queen in a hive supposed to be queenless, but still able to lay a few eggs of both worker and drone, and which may account for the so-called removing eggs from one cell to another, or even from one hive to another, and it is not the first time I have observed a defective queen take refuge in another hive. I trust if the editor of "Gleanings" does not profit from the above, and cease plunging into the mysterious, he will see it advisable to alter his opinion as to how drones are produced, and give to the public reliable information, so that all may profit thereby.—A LANARKSHIRE BEE-KEEPER.



* * * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Stocks for Fruit Trees (Plum).—We cannot answer your questions without name and address, which are not, however, wanted for publication. If you send what is requisite please repeat your questions.

Celery Fungus (R. L.).—You would see a reply on this subject to a correspondent on page 393 last week, after sending your letter. To that reply we have nothing to add, except that the fungus appears to be unusually prevalent this year.

Pruning Plum Trees (W. E.).—If your sketch fairly represents the trees, and especially in the wide space between the main branches, we should not shorten the side shoots at all, except the tips of any that

are soft and unripe through pushing late growth after the summer pruning, and to prevent overcrowding. The more closely you prune the more freely will the growth be made, and the less the number of blossom buds unless the roots are pruned in the same proportion. If the trees were ours we should check the root action now, and limit the pruning to thinning and the removal of soft growths as suggested.

Roses for Arches (G. B.).—The free-growing Ayrshire Roses, such as Alice Grey, Bennett's Seedling, and Splendens, are suitable for covering arches and arbours, as also are the Boursault Roses Amadis, elegans, and inermis. You may add also the evergreen Rose Félicité perpétuelle. These are all free, indeed more or less rampant growers, and are very effective when covered with their great clusters of flowers. If you desire Roses less floriferous, but to produce better blooms over a longer period, plant such varieties as Gloire de Dijon, Belle Lyonnaise, Reine Marie Henriette, Cheshunt Hybrid, with the climbing forms of Victor Verdier, Jules Margottin, Bessie Johnson, and Charles Lefebvre, also the vigorous-growing Madame Clemence Joigneaux. You do not say how many you require, but probably we have named sufficient.

Straightening Fruit Trees Grown Aslant (W. G. P.).—You do not state the cause of the evil, but it usually arises from three causes—viz., sinking of the ground after planting with neglect to ensure secure staking, through force of wind from a particular point, or from neighbouring objects shading them, whereby the trees seek the light. The only remedy in any case is to lift the trees, or at least remove some of the earth from over the roots, so as to facilitate the stems being brought to the perpendicular and properly secured against winds. If the leaning be due to wind or shade it would be best to lift the trees entirely, and turn their heads the other way round; this, however, would only afford temporary relief, as the trees would assuredly take to their former course until the cause of it was removed. If it arise from improper planting it will only be necessary to straighten the trees as advised, and thin their heads on the heavy side, cutting back any straggling growths, so as to form an evenly balanced head.

Myrtle Unhealthy (W. R. O.).—If you closely examine the under sides of the leaves you will find near to the midrib a number of scale insects. They are not very conspicuous, but are plainly visible to the trained eye of a gardener. These insects must be destroyed, and the upper surfaces of the leaves must be cleansed of the dirty incrustation that adheres to them. You allude to the Myrtle as a tree. If the "tree" is only 2 or 3 feet high it will not be tedious process to sponge every leaf with warm soapy water, dislodging the scale as the work proceeds with a pointed stick if necessary. This will undoubtedly prove the best remedy; but if your tree is many feet high the work would certainly be tedious. The sprays, however, do not suggest that they have grown on a large tree planted out, but on a tree in a pot, that not only needs thoroughly washing, but also additional support either from fresh soil or more copious supplies of water. It is certainly in a very weak and unsatisfactory state. After sponging the leaves as directed the plant should be well syringed with clear water.

Gsler Peelings as Manure (Oxford).—The bark of the Willow is rich in potash and soda, and reduced to vegetable mould is a good manure. The peelings should be thrown into a heap, and to every cartload of them add a bushel of salt and a similar quantity of quicklime. By keeping them damp but not wet, and turning at intervals, outside to inside, the decay of the material would be accelerated. If the peelings get dry damp them with urine, which will increase the manurial value of the heap. If burned, there would at once be available mineral substances of great value to fruit trees, and your soil being low and damp, or containing vegetable matter or humus, it would be a better dressing for fruit trees than vegetable soil. The organic matter, however, is lost in the burning, which it is desirable to retain, particularly when the applications of the *débris* is to be made on light soils or those deficient in humus.

Gardenia Unhealthy (F. P.).—If you have sent us a fair sample of the plants they are certainly far from being satisfactory. We should first of all repot them, removing any loose soil from the roots, and place them in clean well-drained pots smaller than those they are now in, using a compost of light turfy loam, fibrous peat, and leaf soil in equal parts, with a free admixture of charcoal broken small and silver sand. We should then plunge the plants if possible in a bottom heat of 85° to 90°, and apply water with great care, giving sufficient to keep the soil healthily moist without saturating it. This, with judicious syringings governed by the state of the weather, and a temperature of 70° as a minimum, would induce fresh root action. This accomplished, we should prune the plants rather severely, removing at least all such growths as you have enclosed, and should then expect healthy shoots and dark green foliage to follow. This effected, the plants could be kept clean and healthy by copious supplies of water, frequent syringings, and a very moist warm atmosphere.

Protecting Standard Roses (M. T.).—It would have been far better if the buds had not moved at all. If the winter proves very severe you will have great difficulty in preserving those "just in leaf, and others showing incipient growth." If you have dry fern in readiness and envelope the stems as well as the tops when sharp frosts occur you may save a number of the Roses, but we should do what you propose with those you are "particularly anxious" to keep—namely, pot them at once. Be very careful that the roots are not dried during removal, and pot firmly in a compost of two-thirds loam and the re-

mainder wood ashes or leaf soil. Give a good watering, and afterwards maintain the soil in a healthy moist condition. The Roses after being potted will be better outside than in so long as the weather is mild; and a few degrees of frost will do no harm, especially if fern is packed round the pots. There is danger in over-protection—that is, placing the Roses in too warm a temperature, and keeping them there for three or four months. As you do not say what your conveniences are for wintering them we cannot give you more precise information; but if you have not a suitable place for storing them in pots it would be preferable to dig them up, laying them close together with their roots carefully packed in soil, and then cover the plants with fern or straw in thickness proportionate to the severity of the weather. We have preserved many Roses by this practice, but the work needs to be done well, and judgment exercised in applying and removing the covering.

Mina lobata (E. B.).—The particulars you require were given some time ago, and were as follows:—"Occasionally instances are brought under notice of old plants that have been lost sight of in gardens for years again coming into favour, and one of the most recent examples of such a recovery is afforded by *Mina lobata*. This plant was introduced from Mexico in 1841, when seeds were sent to the Earl of Burlington at Holker by G. Frederick Dickson, Esq. From Holker plants were sent to the London Horticultural Society, but being exposed in severe weather they were lost, and only two seeds saved. It does not appear to have extended beyond the gardens of a few who were interested in curious or rare plants, and it either gradually died out or became so extremely scarce as to be practically unknown to the majority of cultivators. A short time since Messrs. Haage & Schmidt re-introduced it to Europe, and now it is in the hands of most of the British seedsmen and nurserymen. The genus *Mina* was named in honour of a Mexican celebrity, Don Francisco Xavier Mina, and this species is said to have been generally grown in Mexico for a number of years for ornamental purposes. It is nearly related to the *Ipomæas*, which it particularly resembles in the foliage, but the flowers are totally dissimilar both in form and arrangement. They are in one-sided racemes, which attain the length of 16 inches, the flowers gradually expanding from the base to the tip, which continues to elongate throughout the season. The corollas are ovoid in the bud, when they are of a bright red colour, the expanded flower being tubular and varying from red through yellow shades to white. The older flowers at the base of the raceme are of the lighter tints, and there is thus gradation in each from white or yellow to the deep red terminal buds, giving a strangely varied appearance to the plants. *Mina lobata* is a rapidly growing plant and covers a high wall in a month or two. It grows well at Raby Castle, Darlington, and has a most remarkable effect. Writing in reference to the system of culture adopted, Mr. R. Westcott observes as follows:—"The seed is sown in February in a stove temperature, and the plants kept in the same house until established in 3-inch pots, using light fibry soil, gradually reducing them to greenhouse and cold pit temperature. By that time they should be in 6-inch pots, which will be sufficiently large until they are planted out about the second week in June, which should be on a well-raised border against a south wall. The soil should wholly consist of light fibry loam mixed with a liberal portion of half-decomposed cow manure. The plant, which is of coiling habit, should be trained on strong cords, and the shoots will soon reach the top of any ordinary garden wall. The plants here reached the top of a 13 feet wall this season, and then ran horizontally, flowering at every joint and maturing a quantity of seed. The flowers have a novel and most pleasing effect in bouquets."

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (W. A.).—1, Fearn's Pippin; 2, Warner's King; 3, Cox's Orange Pippin; 4, Cellini; 5, Court Pendu Plat. (W. S.).—1, Marie Louise d'Uccle; 2, Brown Beurré; 3, Sweet Laden is no doubt correct; it is an old Sussex local cider fruit. It is not the same as Lady Apple. (I. C. M.).—1, Not known; 2, Winter Calville; 3, Five-crowned Pippin; 4, Emperor Alexander; 5, too much decayed; 6, Beurré Amande. (A. M. M.).—Spanish Bon Chrétien, a stewing Pear. (W. Allingham).—1, Pine Apple Russet; 2, Aromatic Russet; 3, Braddick's Nonpareil. (George Knight).—1, Beurré Clairgeau; 2, Comte de Lamy; 3, Susette de Bavay; 4, Easter Beurré; 5, Seckle; 6, not known. (G. S. Stott).—We regret we cannot name the Apple sent. Probably a local northern variety. (Jahn Turner).—Royal Russet. (J. H. W.).—1, Knight's Monarch; 2, Hacon's Incomparable; 3, Belle après Noël; 4, Comte de Lamy; 5, Nouveau Poiteau; 7, Easter Beurré. (F. Jellico).—Both are Cox's Orange Pippin. (T. Arnold).—1, Mère de Ménage; 3, Golden Harvey. Pear No. 1, Nouveau Poiteau; 2, Maréchal de Cour. Sorry we cannot name the others.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (M. C. B.).—The Oak is *Quercus Cerris*, the Thorn *Crataegus tanacetifolia*. (E. B.).—1, *Datura suaveolens*. 2, *Abutilon vexillarium*.

3, *Franciscea calycina*. 4, *Davallia dissecta elegans*. 5, *Mina lobata* (see reply above). 6, *Ceanothus dentatus*.

COVENT GARDEN MARKET.—NOVEMBER 5TH.

MARKET quiet with good supplies. Prices unaltered.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.	
Apples, $\frac{1}{2}$ sieve	1	6	to	2	6	Lemons, case	35	0	to 45	0
" Nova Scotia and						Melons, each	1	0		2
" Canada, per barrel	15	0		26	0	Oranges, per 100	4	0		9
" Tasmanian, p. case	0	0		0	0	Peaches, dozen	3	0		12
Grapes, per lb.	0	9		3	0	Plums, $\frac{1}{2}$ sieve	4	0		9
Kentish Filberts, 100 lbs.	0	0		0	0	St. Michael Pines, each..	2	0		6
" Cobs	70	0		75	0	Strawberries, per lb. ..	0	0		0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.	
Artichokes, dozen	0	0	to	0	Mushrooms, punnet ..	1	6	to	2	0
Asparagus, bundle	0	0		0	Mustard & Cress, punnet	0	2		0	0
Beans, Kidney, per lb. ..	0	3		0	Onions, bushel. . . .	3	0		4	0
Beet, Red, dozen	1	0		0	Parsley, dozen bunches	2	0		3	0
Brussels Sprouts, $\frac{1}{2}$ sieve	1	9		2	Parsnips, dozen	1	0		0	0
Cabbage, dozen	1	6		0	Potatoes, per cwt. ..	3	0		4	0
Carrots, bunch	0	4		0	" New, per lb. ..	0	0		0	0
Cauliflowers, dozen.. ..	2	0		4	Rhubarb, bundle	0	2		0	0
Celery, bundle	1	0		1	Salsify, bundle	1	0		1	6
Coleworts, doz. bunches	2	0		4	Scorzonera, bundle ..	1	6		0	0
Cucumbers, doz.	2	0		3	Seakale, per bkt. ..	2	0		2	6
Endive, dozen	1	0		0	Shallots, per lb. ..	0	3		0	0
Herbs, bunch	0	2		0	Spinach, bushel	1	0		2	0
Leeks, bunch	0	2		0	Tomatoes, per lb. ..	0	4		0	6
Lettuce, dozen	0	9		1	Turnips, bunch	0	0		0	4

CUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	4	0	to	8	0	Marguerites, 12 bunches	2	0	to 6 0
Asters, per bunch, French	0	0		0	0	Maidenhair Fern, dozen			
" English, 12 bnchs.	4	0		9	0	bunches	4	0	9 0
Bouvardias, bunch ..	0	6		1	0	Mignonette, 12 bunches..	2	0	4 0
Carnations, 12 bunches ..	6	0		9	0	Pansies, dozen bunches..	0	0	0 0
" 12 blooms ..	1	0		2	0	Pelargoniums, 12 trusses	0	9	1 0
Chrysanthemum, 12 blms.	1	0		3	0	" scarlet, 12 bnchs	4	0	6 0
" 12 bunches	4	0		12	0	Pinks (various), doz. bchs.	0	0	0 0
Cornflower, doz. bunches	0	0		0	0	Primula (double) 12 sprays	0	6	1 0
Dahlias, dozen bunches..	0	0		0	0	Roses (indoor), dozen ..	0	6	1 6
Eucharis, dozen ..	3	0		6	0	" Red (Eug.), 12 bch.	6	0	12 0
Forget-me-not, doz. bnch.	0	0		0	0	" Red, 12 blooms ..	1	0	2 0
Gardenias, 12 blooms ..	4	0		6	0	" Tea, white, dozen..	0	6	2 0
Gladiolus, 12 bunches ..	8	0		18	0	" Yellow	2	0	4 0
Gypsophila, per bunch ..	0	0		0	0	Stocks, dozen bunches ..	0	0	0 0
Lapageria, 12 blooms ..	2	0		4	0	Sweet Peas, 12 bunches	0	0	0 0
Lavender, dozen bunches	0	0		0	0	Tuberose, 12 blooms ..	0	4	0 9
Lilac (French) per bunch	5	0		7	6	Violets (Parme)	2	6	3 6
Lilium, various, 12 blms.	1	0		2	0	" (dark)	1	0	2 0
" longiflorum, 12 blms.	4	0		6	0	" (English), doz. bnch	1	0	2 0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.		
Aralia Sieboldi, dozen ..	6	0	to	12	0	Geraniums Scarlet, p. doz.	2	0	to 6	0	
Arbor Vitæ (golden) doz.	6	0		8	0	Heliotrope, per doz. ..	4	0		6	0
Asters, dozen pots ..	6	0		9	0	Hydraugea, doz. pots ..	9	0		18	0
Calceolaria, per doz. ..	0	0		0	0	Lilium lancifolium, doz.	0	0		0	0
Chrysanthemum, per doz.	6	0		24	0	„ longiflorum, doz. ..	0	0		0	0
Climbing Plants, various,						Lily of the Valley, 12 pots	0	0		0	0
dozen pots	4	0		9	0	Lobelia, per doz.	0	0		0	0
Dracæna terminalis, doz.	24	0		42	0	Marguerite Daisy, dozen	6	0		12	0
„ viridis, dozen ..	12	0		24	0	Mignonette, per dozen ..	4	0		6	0
Erica, Cavendishi, per pt.	0	0		0	0	Musk, per dozen	0	0		0	0
„ various, dozen ..	12	0		18	0	Myrtles, dozen	6	0		12	0
Euonymus, var., dozen ..	6	0		18	0	Nasturtiums, dozen pots	0	0		0	0
Evergreens, in var., dozen	6	0		24	0	Palms, in var., each. . .	2	6		21	0
Ferns, in variety, dozen..	4	0		18	0	Pelargoniums, per doz. ..	0	0		0	0
Ficus elastica, each. . .	1	6		7	0	Rhodanthe, per dozen ..	0	0		0	0
Foliage plants, var., each	2	0		10	0	Stocks, per doz.	0	0		0	0
Fuchsia, per doz. . . .	4	0		9	0	Tropæolums, various, per					
Geraniums, Ivy, per doz.	0	0		0	0	dozen	0	0		0	0



MANURES.

At no better season of the year could special attention be drawn to this subject, as it must enter fully into plans for another year's cropping if we would have a full measure of success in our work. The paper on "The Right Use and Valuation of Artificial Manures," which Mr. Thomas Brown, chemist to the West Norfolk Farmers' Manure Company, read before the Norfolk Chamber of Agriculture on the 11th October, was therefore especially well timed, and we desire to give readers of the Journal the benefit of its teaching.

The chief point of Mr. Brown's paper was the importance of legislative intervention for the prevention of fraud. His estimation that the annual direct loss to agriculture through the sale of inferior and worthless manures amounts to an annual sum repre-

sented by seven figures, or in other words, fully £1,000,000 yearly, is evidently based upon careful calculations, and he is quite right in thinking that a far larger sum is lost indirectly in the resulting deficient crops. Well says he that our legislature has interested itself with the general question of adulteration with the result that last year, out of 70,000 tests made of articles of food by the public analyst, 5000 cases of fraud were detected, and he suggests that agriculture should also be defended by similar machinery. He also points out that "It is generally admitted that it is for the public good that the soil of England should produce a maximum of food. It is also admitted that this end cannot be attained without a large consumption of so-called artificial manures, imitations of which are more easily produced and less easily detected than are those of food. Therefore it must be a public necessity that a stop be put to the sale of useless imitations or fraudulent adulterations of those admittedly necessary substances." This valuable paper absolutely bristles with facts and figures in support of his arguments, and the only possible conclusion is that he is right, and that we should no longer lag behind other countries, for in Germany, France, the United States of America, Canada, &c., the Governments have established public stations where farmers can have samples of manures tested free of cost, and adulteration, if present, detected and punished.

The importance to the farmer of such protection is obvious, but it is emphasised by the statements that in our crops there is annually removed from our soils 170,000 tons of lime phosphate, and 100,000 tons in animals, milk, cheese, &c., sold. The total is equal to the phosphate existing in about 1,000,000 tons of ordinary superphosphate of lime. The amount of nitrogen is still greater, that of potash more than half as much. This drain of fertilisers is met by us by using 1,000,000 tons annually of artificial manures, and by the use of 700,000 tons of food cakes and grain imported from foreign countries; there is thus returned 25,000 tons of bone phosphate, 30,000 tons of nitrogen, and 10,000 tons of potash.

Under the distinctive heading, "What to Use, When to Use, How Much to Use," much sound practical advice is given. In common with other practical chemists, Mr. Brown says that neither magnesia or iron salts are necessary, and that the only fertilisers the farmer requires are nitrogen and bone phosphate generally, and occasionally potash, lime, and soda. He answers the question, In what form shall these bodies be applied? "From the cheapest sources if in an available form," and the articles yielding a more or less available supply are thus tabulated:—

ONE TON OF	CONTAINS POTASH	COSTING
Muriate potash ...	1128 lbs. ...	2d. per lb.
Sulphate potash ...	1050 lbs. ...	2½d. per lb.
Kainit potash ...	300 lbs. ...	2d. per lb.
Nitrate potash ...	1040 lbs. ...	£16 10s. per ton.

ONE TON OF	CONTAINS NITROGEN	COSTING
Nitrate soda ...	350 lbs. ...	5¾d. per lb.
Nitrate potash ...	300 lbs. ...	13d. per lb.
Sulphate ammonia ...	470 lbs. ...	5¾d. per lb.
Dried blood ...	270 lbs. ...	7d. per lb.
Peruvian guano ...	170 lbs. ...	10d. per lb.
Fish guano ...	180 lbs. ...	6¾d. per lb.
Greaves ...	180 lbs. ...	6¾d. per lb.
Rape cake ...	100 lbs. ...	10d. per lb.
Dissolved bone ...	65 lbs. ...	6¾d. per lb.
Wool waste ...	110 lbs. ...	5d. per lb.

ONE TON OF	CONTAINS AVAILABLE PHOSPHATE	COST PER 100 LBS.
Superphosphate ...	600 lbs. ...	11s.
Dissolved bone ...	800 lbs. ...	10s.
Peruvian guano ...	675 lbs. ...	11s.
Rape cake ...	80 lbs. ...	11s.

ONE TON OF	CONTAINS INSOLUBLE PHOSPHATE	COST PER 100 LBS.
Fish guano ...	450 lbs. ...	7s.
Thomas's slag ...	800 lbs. ...	6s.
Bone flour ...	1300 lbs. ...	9s. 9d.

We give this table in full as being most valuable for comparison, and as a safe basis for the selection of chemical manures for home mixing. But we must caution our readers against the assumption that they can obtain small quantities of any of the manures at the prices quoted, as they are only given as showing the relative value of the different available fertilisers and the best form in which to obtain them. For example, in nitrate of potash we have a most powerful fertiliser, but its high price is practically prohibitive, and we naturally turn to muriate of potash as the cheapest and best source of potash for farmers. So also in nitrogen, we see at a glance that nitrate of soda and sulphate of ammonia are best, and we may add that for general use the nitrate is generally preferable.

WORK ON THE HOME FARM.

Cleaning and stirring of arable land has gone on right through October, and we may well record the fact of having had nine consecutive weeks of fine weather for autumn cultivation this year. Plough, harrow, and cultivator have done the work to good purpose indeed, leaving the land cleaner than it has been for many years. Steam tackle has been in full work, most sets being engaged by eager farmers, in some instances for weeks before they could be had. All land not under a crop now has been thrown up into high ridges with the double plough, to be so left till spring, when it will harrow down as fine as a bed of ashes, and if well handled may be sown long before land left on the flat can be dry enough for working.

Water furrows made by the plough have been finished with spades at the lower end, so as to ensure the free escape of surface water running down into the ditches. The "eyes" or outfalls of all land drains have been examined and all obstructions removed, and any necessary ditch scouring is now being done. These are small matters of detail worthy of careful attention, for the stoppage of a drain often spoils a large patch of corn. The draining of wet land is now being done, the landlord supplying the pipes, and the tenants doing the work. Depth of drains and distance apart must depend entirely upon the nature of the soil. We have drained at all depths from 2 to 4 feet, and can only give general advice in a matter, where actual inspection is so necessary before a safe decision can be arrived at. For bog land pipe drains are useless, the only safe plan being to make trenches wide enough to admit an ordinary fagot, and if possible to use fagots of alder wood. Our advice in this matter of bog draining was asked recently by a gentleman in Ireland, who had already made his arrangements for pipe draining a bog. Evidence of the presence of oxide of iron was afforded by a yellow ochreous deposit upon the margin of the stream running through the bog, and our assurance that a similar deposit would soon choke the pipes if they were used, induced him to abandon them for fagot drains, and so render success a certainty. Whatever may be the manner of making the drains, nothing short of good sound true work will answer, and very careful supervision is indispensable.

GREAT MALTING BARLEY COMPETITION.—At the Brewers' Exhibition, London, no less than fifty-six English and twenty-two foreign competitors exhibited samples of malting Barley. The first prize and champion cup open to the world were awarded to Webbs' Kinver Chevalier, shown by Mr. J. Akers of Goring, Berks. This is the fourth annual competition that has been held, and on each occasion Messrs. Webbs' Barley has won similar honours.

METEOROLOGICAL OBSERVATIONS.

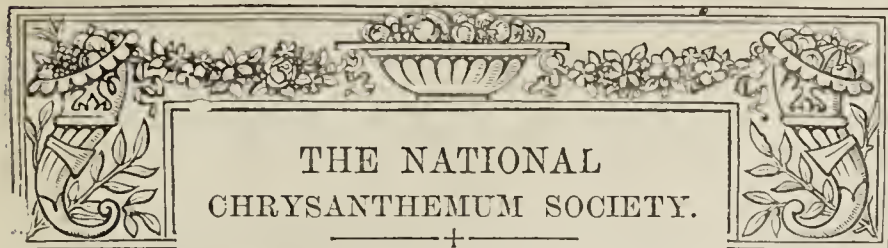
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.					Rain
	Barome- ter at 32° and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min.	In sun.	On grass		
1890. October and November.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Sunday 23	29.421	41.6	39.0	S.W.	49.0	43.4	37.6	80.9	33.0	0.093	
Monday 27	29.883	36.6	32.7	N.W.	48.2	43.9	33.8	80.2	28.0	—	
Tuesday 28	30.121	29.6	28.6	S.W.	44.0	48.0	23.8	72.3	16.8	0.033	
Wednesday 29	29.994	47.6	46.6	S.W.	42.7	58.0	29.4	77.9	23.0	0.010	
Thursday 30	29.959	53.9	52.9	N.W.	45.1	58.9	47.4	75.9	47.1	—	
Friday 31	29.717	53.2	52.3	S.	43.6	56.9	45.9	64.6	37.1	0.049	
Saturday 1	29.723	49.2	45.3	N.	47.6	55.1	46.9	87.5	49.7	0.089	
	29.832	44.5	42.5		45.9	52.0	37.7	77.0	32.7	0.277	

REMARKS.

26th.—A good deal of bright sunshine, with overcast intervals and showers of sleety rain at 11 A.M., 2.30 P.M. and 5.30 P.M.; cold throughout.
27th.—Cloudless and cold.
28th.—Sharp frost early; slight fog till 10 A.M., then bright sunshine, and slightly foggy again in the evening.
29th.—Showers at 4 A.M.; mild and overcast till 10.30 A.M.; then fine with occasional sun, and slight showers in evening.
30th.—Mild and dull in morning; bright sunshine in afternoon; misty evening.
1st.—Dull and rainy morning; overcast afternoon; fine evening; very mild throughout.
2nd.—Cloudless early; bright and fine throughout.
A week of variable temperature, specially noticeable for the very sharp frost on the 2th of October.—G. J. SIMONS.



THE NATIONAL CHRYSANTHEMUM SOCIETY.

SINCE the Chrysanthemum Centenary Festival, which was opened at Westminster on Tuesday last, must be regarded as the crowning event in the history of the National Society, the time is an appropriate one for a consideration of the origin, progress, and work of the organisation which for so many years has been devoted to the encouragement of Chrysanthemums and their cultivators. No special society has attained such a powerful and important position in the horticultural world as this, and there must be some substantial reason for so remarkable an advance. Its origin was lowly, and for many years its work was confined to a very limited area, yet within less than ten years it has sprung into the first rank of horticultural societies both as regards the number of members, the scope of its influence, and in general usefulness. First it is evident in endeavouring to explain this phenomenal progress, it must be assumed that a central authoritative Society was urgently required. Secondly, the system of management adopted must have been exactly what the circumstances demanded, and the workers selected for assistance in the various projects must have combined earnestly in the performance of their honorary duties to have effected such results.

The contrast of the present condition of the Society with that of its earlier years is indeed astonishing, and one old cultivator has given an excellent review of matters in the following words:—"What a host of pleasant reminiscences is started by a glance at the names of some of our Chrysanthemum fathers! Perhaps the very first that are entitled to recognition are the founders of the original Stoke Newington Chrysanthemum Society, Messrs. Holmes, Tant, and James. How little they ever dreamt that their mutual resolve, while returning from the Vauxhall Dahlia Show of 1845, on the top of a 'bus, to hold a friendly competition at the old Rochester Castle in the following November (the loser to pay for a steak supper), would have resulted in such an organisation as the National Society of to-day. Truly, it was the 'day of small things,' but was none the less the foundation of one of the most successful and useful florists' societies that we have yet seen. It was not long ere the 'mum' fever spread like wildfire throughout the north of London; and amongst those who had the opportunity of visiting these early shows, who will forget the truly gigantic plants staged by Holmes; the smaller, but none the less creditable, 'Poms' of James, or the blooms of Tant? They were indeed the marvels of the hour. Very soon other competitors appeared on the scene, and made their mark. Amongst them, none will forget

Old George Taylor,' who wrote, it is said, the first treatise on the culture of the Chrysanthemum; Tom Merry, too, with his box of cut blooms, was for many years a prominent competitor; E. Hutton, of the Bank of England, represented the amateurs of the day; Arthur Wortley, later on Secretary of the Society, was often well to the fore with his flowers, mostly cut from plants grown in the open border, and trained against the wall, with no other protection than a weather board above them; Scruby and Dan Monk each scored their victories—aye, and well-earned they were; while our old esteemed Edward Sanderson was then often the recipient of the highest honours, as witness the store of cups and trophies he cherishes at Willesden. Proud he may well be of his share in developing the love of the 'Autumn Queen.' Charles Wilkinson and Williams, the then beadle of West Hackney Church, each had

their day of fame, and were recognised amongst the growers of the time. A few years later, and who will not remember the specimen Pompons of David Hutt's culture? Have they ever been equalled? Certainly never surpassed."

To briefly review the history of the Society it may be stated that the year following the conversation above recorded was practically the commencement, the first public show being held in 1847 at the inn named, and from then until 1864, shows were held annually either at the Rochester Castle or the Manor Rooms. During this time the show improved considerably both in the number and quality of the exhibits, and meetings for discussion were also held. At one of these, on March 28th, 1850, Mr. W. Holmes (father of the late Hon. Secretary), read the first essay on the culture of the Chrysanthemum, and in the following year, on February 27th, Mr. George Taylor contributed an essay on the same subject, which was afterwards amplified and published as a book that was for years the recognised authority on all points relating to specimen plants. In the same year—namely, 1851, Mr. John Edwards became President, and Mr. E. Sanderson was appointed Secretary. In 1873, after holding several shows with varying fortunes in the Defoe Road, Stoke Newington, and elsewhere, the Society was converted into the Borough of Hackney Chrysanthemum Society, and the exhibitions were continued in the Defoe Road until 1877, when they were transferred to the Royal Aquarium, Westminster, and an important era in the life of the Society was commenced. This proceeding did not, however, meet with the approval of all the members, and some retired, forming a new Society at Stoke Newington, which has not had a very successful career. The late Mr. William Holmes became the Hon. Secretary in the year of migration to Westminster, and a rapid improvement was soon seen, for the number of members increased from fifty-two in 1877 to 200 in 1883. A rapid advance under a vigorous and progressive policy justified the adoption of the title "National Chrysanthemum Society" in the year 1884.

Progress still continued in a remarkable manner, and after two or three years it became evident the Society must still further extend its sphere of operations. One of the projects taken into consideration early in 1888 was arranging for holding a show at some provincial town in connection with the local Society. Letters were received from the secretaries of several affiliated societies, and ultimately it was resolved to hold a Show at Sheffield in November, 1888. Another important matter was also taken in hand in that year—namely, the preparation of an authoritative catalogue of Chrysanthemums that would be likely to prove of real service to cultivators. A Committee, comprising thirty of the leading experts in Great Britain, was appointed, with a Revision Committee of three. The work was issued early in the autumn, and was well received. A permanent Revision Committee, comprising Messrs. Lewis Castle, G. Gordon, and Payne, was then appointed, and each member was presented with a silver medal for the services rendered in the preparation of the work. A supplement was issued in 1889, and a revised edition in the present year, including the varieties brought into notice since the autumn of 1888.

At the close of the eventful year named Mr. Edward Sanderson, who had been connected with the Society for forty years, during thirty of which he held the office of President, resigned his post greatly to the regret of all members. A sub-committee, comprising Messrs. Jukes, Wynne and Castle, was appointed to revise the rules of the Society and suggest names for President and Vice-Presidents, with the result that some important alterations were effected. The rules were rendered more uniform and systematic, and Mr. Castle having obtained the consent of Lord Brooke to act as President, he was unanimously elected at the annual meeting in January, 1889, to that office, with the Earl of Lytton, Lord Ebury, Sir Guyer Hunter, Sir Edwin Saunders, Dr. Robert Hogg, J. Wormald and E. Sanderson as Vice-Presidents,

Mr. R. Ballantine as Chairman, and Mr. E. C. Jukes as Vice-Chairman of committees.

The programme for 1889 included three metropolitan Shows and a provincial Show at Hull in conjunction with the Hull and East Riding Society. This proved a great success; one of the finest Exhibitions of Chrysanthemums ever seen in the north was provided, and there was a large attendance of visitors, resulting in a satisfactory financial balance. In the present year the Committee decided to concentrate their efforts upon the Centenary Festival, the result of which is recorded in another page. The programme for Tuesday was as follows:—The opening ceremonial commenced at one o'clock, Lady Brooke and several friends being met at the entrance by the Reception Committee and the invited guests, and conducted round the Exhibition. An address was presented to Lady Brooke, and the Exhibition formally declared open to the public. At 6 P.M. a Conference meeting was held in the iron room under the presidency of Sir Edwin Saunders, F.R.C.S., and papers were read by Mr. Shirley Hibberd, F.R.H.S., "On the Origin of the Florist's Chrysanthemum;" by Mrs. Marian Thrower, representative of the Northern Tasmanian Horticultural Society, "On Chrysanthemums in Tasmania;" and by Mr. G. T. Haité, F.L.S., "The Chrysanthemum in Art."

Fortunately we can find space for Mrs. Thrower's paper this week, the others are reluctantly reserved for the present.

To-day, Thursday, November 13th, a Conference will be held in the iron room at 2.30 P.M., Sir Guyer Hunter, M.P., Vice-President, in the chair, when papers will be read by Mr. Briscoe-Ironside "On Experiments in Chrysanthemum Culture," and by Mr. C. Gibson "On Chrysanthemums for Exhibition." At 6 P.M. prompt a grand banquet will take place in St. Stephen's Hall, Lord Brooke, M.P., President, in the chair, supported by representatives from foreign and colonial affiliated societies and others. Private entrance from Broad Sanctuary. On Friday, November 14th, St. Stephen's Hall will be arranged as a lounge, so as to afford opportunity for conversation. At 4 P.M. an informal meeting will be held with the object of affording opportunity for suggestions as to the future operations of the Society.

Elsewhere in the present issue we give seven portraits of the ladies and gentlemen who have been specially concerned with the Centenary proceedings—namely, Lady Brooke, Lord Brooke, President; Sir W. Guyer Hunter, M.P., K.C.M.G., and Sir Edwin Saunders, F.R.C.S., Vice-Presidents; with Mr. R. Ballantine, Chairman; and Mr. E. C. Jukes, Vice-Chairman, as representing the officers of the Society. Besides these we are enabled to give a portrait of Mrs. Marian Thrower, who attended the Show and Conference as a representative of the Tasmanian Society, which is affiliated to the National Society.

GROWING AND SELLING FRUIT.

(Concluded from page 351.)

GATHERING, MARKETING, AND STORING WALL FRUITS.

APRICOTS should be gathered as soon as they are well coloured and before they get soft, and are best disposed of near home if possible, as the French fruit, although not nearly so good, makes prices low in the markets. There is generally a good demand at the houses of the neighbouring gentry for this fruit in country places, at from 2s. to 4s. per dozen, according to size and scarcity of the crop. In some seasons cottagers have been known to make enough money to pay the rent from one Apricot tree on their house. If this fruit is sent to market, it must be carefully packed in small shallow boxes, just deep enough to hold one layer of fruit, with plenty of pink or blue tissue paper placed between them, so as to leave the upper part of the fruit bare when the box is unpacked without disturbing the fruit. Some more paper should be placed over the top and the lid lightly tacked on. Apricots will not keep after the fruit is soft more than four or five days.

PEACHES.—These must be gathered carefully as soon as they begin to feel soft at the base, and then sent to market as quickly as possible. They require very great care in handling, or they show every finger mark in a short time, and only realise very low prices; but if carefully gathered and packed, good Peaches will bring from 4s. to 10s., or even 12s. per dozen if extra fine and the crop is scarce.

Moderate crops only should be grown, one fruit to each square foot being plenty; that is, each fruit when ripe should be almost a foot away from any others, as near as can be judged. At this rate a tree 20 feet wide and 12 feet high would give twenty dozen, worth from £4 to £8. To have large fruits that will realise these prices they should be thinned when as large as peas to 6 inches apart, and again when as large as small walnuts to 13 inches apart. For marketing the fruit the salesmen generally supply boxes about 3 inches deep that will hold about two dozen in one layer. Each fruit should have a strip of white tissue paper wrapped round the sides, so as to cover the lower half of the fruit. A twist at the bottom after wrapping it round will help to keep it on. Strips of cotton wool about 1½ inch wide are then cut across the piece and opened out from each end, so as to form a thin strip of wadding about 2½ feet long and 1½ inch wide. This is carefully rolled round the fruit as many times as it will go over the tissue paper. The boxes should be lined with cotton wool inside, and the Peaches placed in them close together as they are wrapped. When the box will hold no more, small pieces of wadding may be gently pushed in the corners of the boxes and wherever there is room, so as to make all secure and prevent any movement of the fruit. If they are packed in the way I have described, they should now be firmly in the boxes with nothing around the upper half of the fruit, so that everyone can see their size and colour when offered for sale. A sheet of tissue paper must next be laid over them, and then one or two pieces of wadding, the same size as the box, so as to fill all up and prevent any movement when travelling. Packing Peaches requires great care, but pays for all the attention bestowed upon it. I have for several years past packed from 4000 to 6000 annually in the above manner, and have no complaints from anyone about damage, although some of it travels 400 to 500 miles. There is no system equal to it, although moss, dried grass, and other things are sometimes recommended. The table on which the packing is done should always have a strip of wool on it to lay the fruit on. Peaches will keep several days if laid on some dry and soft material in a cool and dry room.

MORELLO CHERRIES.—These must be gathered when perfectly dry, and when they have assumed a dark red colour; they are best packed in 1 lb. punnets, as recommended for Strawberries, and are worth from 6s. to 12s. per dozen lbs., according to size and crop. They should be cut off the trees with scissors to avoid stripping the bark off the tree.

PEARS.—The largest fruits must be packed closely together in boxes or shallow baskets as soon as they commence changing their colour. They should not be put more than two layers deep. The smaller fruit can be packed in half sieves as recommended for Apples. They must always be got to the market before they get soft, or will not fetch good prices. Those packed in boxes should have some paper shavings put at bottom and top and all round them to prevent bruising of the skin.

PLUMS.—Directions for packing these have been given previously.

ENEMIES OF WALL FRUITS.

PEACHES AND PLUMS.—Green fly or aphis, which comes underneath the young leaves and at the points of the shoots, and sucks out the juices of the plant, is the worst pest, and must have early attention. London tobacco juice, to be obtained at any chemists, is the best remedy. Half a pint should be mixed in 3 gallons of water, and the trees syringed with the mixture after the sun is off them. If this is done before the flowers open, and again soon after the fruit becomes visible, there will not be much fly afterwards. Red spider is troublesome sometimes in hot dry seasons, and as a preventive it is well on the evening of the first warm day to syringe the trees with water containing 1 oz. of Gishurst compound to each gallon, and to repeat this syringing before the fruit gets the size of walnuts. The insect is not a spider, and is very seldom red, but is very destructive when it is once established. It is smaller than the cheese mite, of a similar colour, and increases very fast if dry and warm, eventually causing all the leaves to drop off if left undisturbed. Earwigs will eat small holes in Peaches and Apricots when nearly ripe, and the fruit soon decays after. They should be trapped by placing pieces of dry Broad Bean or Onion stalks about 1 foot long in the trees. They will get in these during the night, and should be blown out into a can of water in the morning. A tablespoonful of petroleum allowed to swim on the top of the water will kill them as soon as they get in it. Woodlice are often troublesome by eating the fruit, and should be caught by turning some small flower pots upside down near their haunts, with a little dry hay or moss inside, and examining them every morning as for earwigs. Blister sometimes attacks the leaves of Peaches, causing them to grow extra thick, and of a pale colour. This is caused by cold winds rupturing the sap vessels when the leaves are young and tender. The worst

leaves should be picked off, as they encourage insects to take up their residence on them.

CHERRIES.—Black fly will sometimes attack Cherry trees very badly. The best remedy is to syringe with the tobacco water solution as recommended for green fly as soon as the first flies are seen.

PEARS.—Birds will often eat small holes near the stalk of Pears, causing them to decay quickly; tits are the worst. The best plan is to net the fruit on walls if they are attacked.

PROTECTION OF THE FLOWERS IN SPRING.

As both the Peach and Apricot come from a much warmer country than ours they flower very early in the spring, and are very liable to be damaged by the late frosts. It is best to hang old fish netting of a double thickness loosely over the trees, and let it remain until the leaves are a fair size, and all danger of frost is over. Branches of Spruce, Fir, and Yew stuck in the trees at intervals are the best substitute if net cannot be obtained. These protecting materials should not be put on until the first flowers open in spring, and must not be left on too long, or the young shoots will grow through them and they will be very difficult to remove.

CONCLUSION.

Fruit growing has been recommended to farmers as a cure for the agricultural depression. The speakers and writers probably thought that anybody could grow fruit, and they were right to a certain extent; but when it comes to a question of profit, those will have the most who pay the most attention to it and have the best knowledge of the business—in other words, success in this matter depends on close attention to all details, and strict and sound business principles, carried out with energy and perseverance. Fruit growing is not an Eldorado, where anyone can pick up gold; it has to be diligently sought for. I have mentioned this because a person unacquainted with the subject might read what prices it is possible to get, and think they were to be had every year. It is not so; a full crop of fruit is very seldom brought to maturity, probably not more than once in ten years. The greatest skill and attention will not compensate for dull wet seasons, which cause badly ripened wood and a short crop the following year; or for late spring frosts, which kill the tender blossoms when they open. But for all this money can be made from fruit growing, and it will probably develop much more in the future, as the population increases and greater facilities are given for obtaining land.—**W. H. DIVERS.**

SMALL FERNS FOR DINNER TABLE DECORATION.

FASHION in dinner table decoration, like most other things, is continually changing. When I began my gardening career Ferns and bright foliaged plants were liberally used, while cut flowers were only employed in small quantities, and were generally reserved for filling epergnes of massive design which invariably occupied the centre of a table, and in too many instances greatly obstructed the view from one side to the other at that particular point. A few years later cut flowers were almost entirely used, with the exception of a few small Palms or plants with graceful foliage which were dotted about at irregular intervals—and to my mind these designs when well carried out resulted in some of the most perfect examples of dinner table embellishment that construction and artistic skill could devise. There was, however, one great drawback to these beautiful but fleeting displays—viz., the numbers of choice flowers which were required for the purpose during the autumn and winter months, and the supply to be drawn from the occupants of glass structures was so great that even in large establishments the resources were taxed to their utmost. The vases in the boudoir and the drawing room, where choice flowers might be shown off to advantage for days, had to be filled with more commonplace flowers in order to keep the dinner table in floral splendour for a few hours. In many gardens where the extent of glass is ridiculously small when compared with the quantities of cut flowers required, able and energetic cultivators know only too well how their efforts to grow both plants and fruits to a high state of perfection are crippled by the constant demand for cut flowers, and which often necessitates the growing of a great variety of plants in one house, a practice which is seldom productive of good results. Happily for those placed in such unfavourable circumstances there has been a growing tendency during the last few years to employ Ferns and other graceful foliaged plants more extensively for dinner table embellishment than heretofore, consequently less quantities of cut flowers are needed for that purpose, and are therefore available for the adornment of other rooms, where their scent and beauty are appreciated for a longer period.

Although to a great extent we have returned to plants used for dinner table ten or twenty years ago, the manner of arranging them, and the receptacles for holding them, are both a contrast and an advance upon the somewhat massive style which was prevalent then. The plants used now are, as a rule, smaller than formerly, and the receptacles provided for holding them have a great range of variety both in size and design. China, glass, silver, and gold are fashioned into stands and vases, or ornaments exceedingly pretty, and of almost every conceivable shape, but in the majority of cases the aperture intended for the reception of plants is small, in many instances only large enough to hold Ferns or plants that have been grown in thumb pots, while in other cases there is room for the reception of pots varying in size up to 6-inch. For filling ornaments of the above description Ferns of various kinds are especially adapted, and in order to provide a continual supply for that purpose, a regular system of raising young plants must be followed. When once the right method is adopted, it is surprising how easy it becomes, although it certainly requires a good deal of attention. We are constantly on the look out for young seedling Ferns which spring up plentifully upon the walls of plant houses and among pot plants, and when removing old fronds containing spores we shake them over the frame which covers the central bed in the stove, to distribute the spores, and doubtless this accounts for the young seedlings that are constantly appearing. These we secure as soon as they are large enough to handle, and dibble them into pans filled with light soil, with a liberal addition of sand and fine charcoal. The pans are then placed under hand-lights kept in a greenhouse during the summer, and in Cucumber houses or stoves in the winter and spring. With proper attention to watering and damping the foliage with the syringe these seedlings soon grow into useful little Ferns. When well rooted the strongest of them are transferred to 3-inch pots and the weaker to thumb pots. Numbers of well grown Ferns in these sized pots we find extremely useful for dinner-table ornaments of various descriptions, but they should be carpeted with *Selaginellas*, which look much better than using moss for covering the soil. Small pieces of *Selaginella Kraussiana* and *aurea* should be dibbled into the soil as soon as the plants are placed in the pots in which they are wanted for use. Then by the time the Ferns have grown into a condition suitable for use, the *Selaginella* will have formed into a carpet at the base. When the latter is inserted in the soil the pots ought to be placed under a handlight again, and kept there till well established, when they may be given more light and air to harden the fronds. In some cases tins are made to fit into low gold and silver stands. There ought to be two sets of these tins, so that Ferns in one set may be growing while the others are doing duty on the dinner table.

Any Ferns prove useful, and by constantly pricking off seedlings a great variety is obtained, and when they become too shabby for the table the old fronds should be removed, the plants repotted and grown for supplying cut fronds, or for ordinary decorative purposes. By these simple means a full stock of Ferns in great variety is easily kept up.—**H. DUNKIN.**

PANCRATIUMS.

THESE bulbous plants comprise many species and varieties of great beauty, are natives of the East and West Indies. They require a rather high temperature, moist and shady position, to grow them well, say a stove heat of 70° in summer and 60° in winter should be the minimum. They can be flowered twice a year, at least a few of the species, such as *P. fragrans*, *P. zeylanicum*, and *P. rotatum*; but if large specimens are to be obtained in as short a time as possible they should only be allowed to flower once a year, and that at their natural period, which is July or August. Young plants should be pushed on by repeated shifting as soon as they fill their pots with roots. When the specimens are as large as required they should only receive a shift every four years. Our largest specimens are in 18-inch pots; in these they were placed five years ago, and last July each threw up eleven scapes, with from eight to ten flowers on each. The soil used is two parts fibry loam, one part charcoal, and one part silver sand and sheep droppings. The loam is broken into pieces about the size of pigeon's eggs, the charcoal the same; when all has been turned two or three times it should then be run through a half-inch riddle, and what remains in the riddle put in the pots. In potting the soil should be rammed very firmly. In the stove they should be close to the glass where there is plenty of light, but shaded from the direct rays of the sun, and they should receive a bountiful supply of water in the summer time, both from the watering can and syringe. Even during the winter the syringe must be more freely employed than for most stove plants, particularly so if the stove in which they are placed is not furnished with vapour appliances. They are

benefited by being turned into a cool conservatory when in flower, and supplied with a little stimulant; it prolongs their flowering season, and also imparts a much finer waxy appearance to the flowers—moreover, they last much longer in a cut state when subjected to this treatment previous.—H. E.



AUTUMN-BLOOMING ROSES.

As a free flowering hardy Tea for buttonholes Madame Berard never fails with me. The buds are not large it is true, but they are good in shape and colour and nicely scented, while the bright bronzy foliage is all that can be wished to show up the deep yellow buds. I have been cutting at the third crop of blooms this season from a standard in the open (a mop head if you like) for nearly a month, and since the frost and snow last week I cut on one day three dozen blooms and buds, besides leaving about six dozen buds, which look promising with open weather.

Catherine Mermet I cut at the same time in perfection, fit for any show in July. Souvenir de la Malmaison is too well known as a good autumn bloomer to need any praise. In summer the blooms are often spoiled in colour, and become a dirty whitish colour, from thrips being partial to them; why I could never understand, unless it is its rather peculiar scent. My plan to save them is to take the buds in the left hand with the point outward between the thumb and forefinger, and gently squeeze them from the base upwards, when the thrips run up and out on to the hand, when they are killed. The buds are then tied up loosely in a piece of newspaper, and on developing the colour is most delicate and the shape kept closer than when allowed to throw themselves so wide open. This Rose never fails with me at the shows on this account, whereas others say they cannot grow it. Gloire de Dijon, everybody knows, needs only mention. Général Jacqueminot has lately produced some of the best blooms of the season on the ends of the strong shoots from own root bushes. Annie Wood has produced some splendid buds, and is still in bloom.—J. HAM, *Astwood Bank, Worcestershire.*

"AMATEUR" ROSE GROWERS.

I READ with a great deal of interest the letter of "An Exhibitor" *re* above in your issue of October 16th, because I knew from experience the reception which would be accorded to his remarks. The Journal of October 23rd fully bears out my expectations, and yet, although your three correspondents of that date are on the Committee of the National Rose Society, and in the very front rank of exhibitors, I venture to think that they are considerably in the dark as to the real grievance, or difficulty, at issue.

I think it lies perhaps rather in the question of aid in the work of cultivation than in the mere matter of numbers grown. There are scores of earnest, ardent cultivators of the Rose, who from lack of means are entirely unable to employ any help in the tending of their stock, and who, in addition, are themselves engaged in business, and so only able to bestow a limited amount of time upon their favourites, and for such men I maintain there is no provision specially made in the schedules of the National and other great shows. The importance of the difficulty again is not as to whether the help is that of a regular gardener or not (for I suppose no grower would entrust the main culture of his Roses to an assistant), but the point is that when need arises one man is able to command help while another is not, and yet the two are placed together in the exhibition. Let me mention one or two cases in point. In his review of the Rose season, in the very number in which "An Exhibitor's" letter appears, "D., Deal," speaks of one large grower being plagued with the aphid, and putting on half a dozen men to cope with it. Exactly! But the poorer man could not possibly command such help, and so his Roses would suffer accordingly. Again, we all know the value of some slight protection, especially for Teas, in hard weather, and the equal importance of not applying that protection until the frost actually appears. Now the man of means can leave his plants till the last moment, as it were, and then, with the assistance which he can command, quickly make all safe, while the other man, perhaps away at his business for a couple of days, when hard frost sets in, has no one to set at work, and his stock is left unprotected. Once more. Either of your three correspondents would laugh aloud at the idea of getting up early in the darkness of a December morning, and by the light of a candle planting a choice new Rose, before hurrying off to his daily work, and yet that is how I planted my first Earl of Dufferin. And so I might go on. Manuring is only half done, digging is sadly neglected all from the same cause, and such men as these, while eminently qualified for membership in the National Rose Society, are kept outside its ranks, because (while no "pot-hunters") they cannot rightly afford to pay the subscription without some reasonable chance of regaining it in the shape of prize money, and no provision is made for them to do this.

One of your correspondents refers to the divisions of classes in the National schedule; but I would point out that that only protects one division from another, and that there is nothing to prevent the

strongest grower entering in the smallest classes if for any reason, such as a bad season, &c., he does not find his blooms up to their usual form. If I am told that good taste would forbid, I can only say that, having attended every show since St. James's Hall, I know that good taste does not always prevent, has not always prevented in the past; and if I am asked for proof of this assertion I cannot do better than refer to Mr. D'Ombra's vigorous and well deserved remarks as to what he termed "ungenerous showing" in the "Rosarian's Year Book" of two years ago.

No, sir, the National Rose Society, instead of showing the way, is behind the age in this matter. Many of the leading provincial shows provide classes for amateurs employing no gardener, and find them answer well. The National Chrysanthemum Society provides (I think it is) eight classes for such growers, and in reply to my inquiry, the late esteemed Mr. Wm. Holmes assured me that they have no more difficulty, and no more complaints of unqualified growers making use of such classes, than with reference to any others. And I feel strongly that if the "National" Rose Society is to continue to be worthy of its title, it must make provision for such men; and then in point of numbers, as well as in quality, it will be national indeed. For let me say that in my own district only I know of at least ten growers who would join the Society to-morrow if classes such as I and "An Exhibitor" have instanced were provided.

Apologising for the length of this letter, and pleading the importance of the subject as my excuse.—J. B.

SLOPES AND TERRACES.

THE usual accompaniment of a terrace—viz., "the slope," is sometimes dispensed with when a wall is adopted, but it is common where there is a number of descents made to have the top one only as a wall with balustrade or parapet, and the others constituting a series of slopes, which may either be of turf or shrubs as desired. As such works usually come under the management of the resident gardener, a few hints may be of service. Let us take a common case as an example. A residence occupies a rather elevated position, and the ground descends from the base of the building in the direction in which it is proposed to form dressed grounds. In such a case it is not unusual to cut the slope into a series of terraces, and at the bottom to form a panel, which to the eye appears to be level, but which in reality is not so; nevertheless, the whole work is of such a nature that without some judgment at the commencement, as well as in the process of the work, some great error may be run into which may render the ultimate completion of the work both difficult and needlessly costly. To obviate this, let us take a survey of the whole before a spade is put in. By the exercise of some of the rules of geometry, aided by what is still more serviceable—the judgment of the eye, a rough idea may be formed of what number of slopes and their elevation, as well as the number and widths of the terraces or landings, the ground may be conveniently formed into. The hard-and-fast lines of the architect in all cases that I have witnessed means a larger outlay than the prudent gardener would recommend; as when material has to be brought, or it may be taken away, in order that a precise width of terrace or height of panel to an inch may be complied with; whereas a little discretionary power given to the operator will usually save a large outlay, and the appearance be really the same.

Taking into consideration the ultimate effect that is looked for in a place carried out in slopes and levels, especially when viewed from the top, we may say that where the builder's work does not dictate the forms the gardener has to work to, a certain amount of conformity to the existing grounds may be made with great advantage, and even mechanical works, as steps and landings, ought to be made to act in like manner. The advisability of this is not for mere appearance only, but for the more imperative object of utility. Many years ago we remodelled some slopes that form the garden front, and added a flight of steps of about 15 feet wide and forty-seven in number, in a series of flights and landings, and each step inclined outwards about one-eighth of an inch, while the landings had likewise an inclination of about one in thirty or thereabouts, the groundwork partaking of the same character, while the slopes which corresponded with the easy and comfortable flight of steps were formed on the gradient of about $2\frac{1}{4}$ base to 1 in perpendicular, or about 20° —a slope for grass quite steep enough in a district like this where the summer drought tells so seriously on glass slopes. A moist soil and north aspect may allow a steeper incline perhaps, but we would not advise a less incline than what mechanics call two to one in ordinary cases, as it is not easy to walk up a steeper one. Many other reasons might be put forth for not having a steeper incline than that, not the least being the frequency the turf gets broken and destroyed when it is too steep, and unless some important reason renders it necessary to be so, it had better have the easy and agreeable form which the gradient above gives it than it would have if it were more upright. I may here add that em-

bankments for roads or other purposes ought to be even more than that. A base of three to one perpendicular is not unusual where the material is of a very loose kind, but a cutting may be steeper, and our railways afford examples of all gradients from 60° or more down to 15°, and some of the embankments also present a diversity of angles, all, doubtless, guided by the character of the material of which it is composed and of other matters bearing on the case.

We now come to what are called levels, but which in reality had better be inclines also, not, of course, to appear to be so, but by appearing to conform to the surrounding objects they look level. A panel we have here at the base of the flight of steps alluded to has a length and width of about 160 feet, and there being a farther fall in the ground beyond the distance alluded to a decline in that distance was necessary. Partly to give the effect alluded to, as well as to obviate the necessity of a needless amount of wheelbarrow work, the descent of the 160 feet was quite 6 feet, and less would certainly not have looked so well. As viewed from the top it appears level, which it would not have done if really so, as in that case it would have looked as if it leaned inwards. This deception of the eye ought to be studied by those having such works in view, and a very good example may be met with in winter when a pond by the side of some hill is frozen over, and perhaps covered with snow. Perfectly level as we all know such an object must be, its appearance when looked at from above is anything but pleasing, and certainly the reverse of level, looking as if it pitched in towards the hill. It is to obviate this that I recommend the incline above spoken of or some near approach to it.

I may here add that the incline recommended for the steps and landing enables the water to run off, which it would not do if each portion were level, and the rain backed perhaps by a wind blowing in the direction to keep it there. This matter is well worth consideration, and each step ought to "weather," as masons have it, not less than the eighth of an inch, and the landings accordingly.

I have not said anything on the propriety of keeping the best soil to the top, as I conclude this will be sufficiently well understood if the works be in the hands of gardeners. On another occasion I may, nevertheless, add a little more on this head, on which not a little of the ultimate effect depends if the ground operated upon has to form a series of flower beds or to be otherwise planted.—J.

DEATH OF MR. JAMES MCINTOSH.

By the death of this gentleman, which occurred on Wednesday evening, the 5th inst., at his residence, Duneevan, Oatlands Park, Weybridge, horticulture loses one of its greatest patrons, and all who enjoyed his friendship will mourn the loss of one of the kindest and best of men. Mr. McIntosh, when in health, was one of the most regular attendants at the meetings of the Royal Horticultural Society, had a seat on the Council, and was a most useful member of the Floral Committee. He was a ready and good supporter of all that was intended to be beneficial in horticulture, and of charities connected therewith. A few years ago his health failed, and he was unable to take an active part in public matters, and could seldom leave his home. Subsequently he was better for a time, but about two months ago was stricken down with congestion of the lungs, and no skill or care could avert the fatal termination.

Mr. McIntosh was born in London in 1814, and was consequently in the seventy-seventh year of his age. In early life he was much interested in engineering and surveying, and was engaged with his uncle in the construction of large Government works, including, we think, the Plymouth Breakwater and Portsmouth Docks, as well as large portions of the Midland, Great Western, and other railways. He, however, retired from business many years ago, and spent most of his time in the pursuit he loved—gardening. He was always fond of raising seedlings, propagating, making experiments, and having trials of many varieties of different kinds of plants, and he derived pleasure from such engagements to the last. Before he purchased Duneevan he used to grow Hyacinths in glasses extensively in London, and in his various trials for keeping the water pure discovered the plan now so generally adopted of placing charcoal in the glasses.

He was a great admirer of all kinds of flowers, but especially Rhododendrons, Roses, Chrysanthemums, Zonal Pelargoniums, Hyacinths, and Lilliums. Of these he had large and choice collections, and few men knew the varieties better than he did. He was seldom at a loss to name them at a glance, and was quick to note their merits and peculiarities. Having acquired Duneevan he may be said to have spent the last quarter of a century in improving it, and during Lily and Rhododendron time not many gardens were more beautiful than his. He planted all the new Rhododendrons as they were obtainable, and Lilliums among them. Rhododendrons that he planted when 15 to 20 inches high he lived to see attain heights of nearly as many feet. He was very proud, as he might be, of his *Lilium auratum*, 11 feet 2 inches high, and of his *L. Krameri* with nine flowers on a stem; also among his Conifers, of a handsome *Abies Albertiana*, and the finest specimen in existence of

Cupressus Lawsoniana erecta viridis. He enjoyed his picturesque and beautifully kept grounds greatly, and liked others to enjoy them too.

A few ago years he bought additional land and made a new kitchen garden, in which he planted the best varieties of hardy fruits he could select, also erected excellent ranges of glass, planted several varieties of Grapes, and every year he had trials of all the more promising Melons. He was most observant and methodical; and in Mr. T. Taylor, his head gardener, he had a man after his own heart—capable, trustworthy, and devoted to his duties and to his master. It sounded a little unusual to hear Mr. McIntosh speak, not of "my gardener," but of "my friend Taylor," for as such he regarded him. As may be imagined, Mr. Taylor is in great grief by the loss of his master, and says he can never hope to see his like again.

The portrait of Mr. McIntosh is from a photograph taken about seven years ago when he attended the meetings in London, and spent most of his time at home in tending his flowers, and taming, by gentleness, patience, and kindness, the wild birds in his garden. We have seen thrushes run after him like chickens, and cluster round his feet for the biscuit that never failed them, a chaffinch that used to follow him from garden to garden, but most wonderful of all a robin that had no hesitation in flying up and resting in his beard to pick the crumbs from his mouth; but visitors had to stand aside to see the confidence the

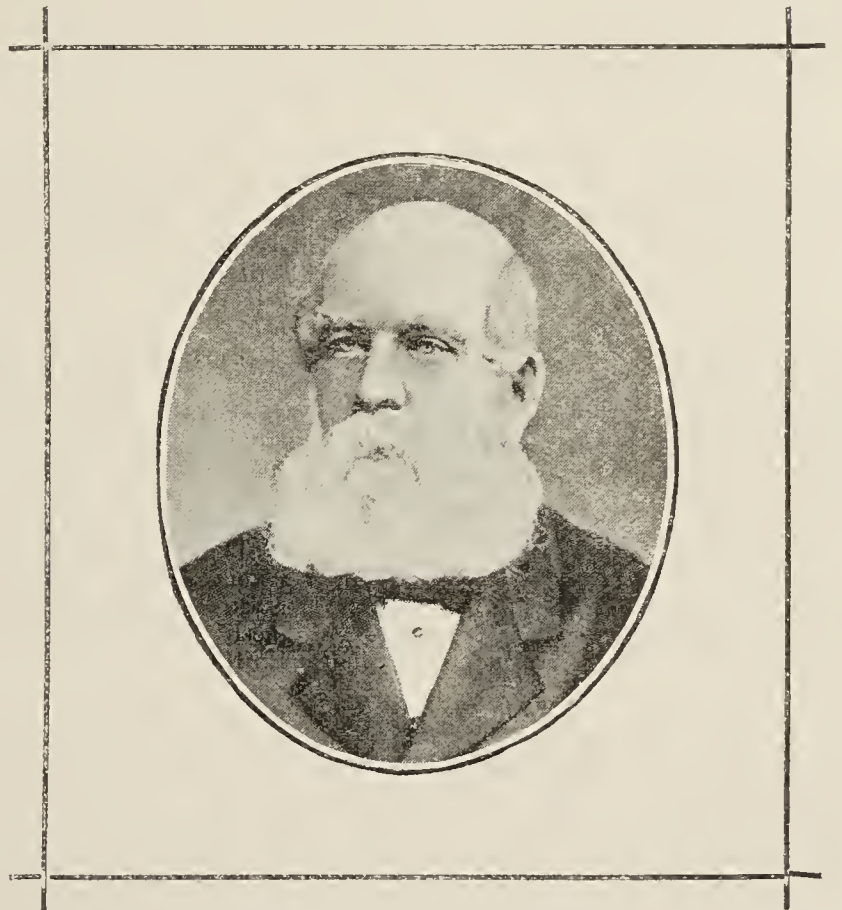


FIG. 55.—MR. JAMES MCINTOSH.

birds had in the friend that they knew so well. A kind, thoughtful, good man, and great amateur gardener has been taken from the world by the death of Mr. McIntosh, who leaves a widow but no family. He was interred in the Woking Cemetery yesterday (Wednesday) deeply mourned by relatives and friends.

By the death of my excellent and much-valued friend, Mr. James McIntosh of Duneevan, horticulture has lost one of its brightest ornaments, most generous patrons, and the world one whom it could ill afford to lose. All who have ever had the privilege of knowing him, and seeing him in the home he so much loved, can bear witness to his worth and his love for everything connected with a garden, and how his refined taste, backed by ample means, enabled him to make Duneevan a classic spot for all who shared the affection he had for everything connected with a garden, and yet by one of those inscrutable dealings of God, which we are so unable to decipher, during the latter years of his life he was greatly, if not altogether, debarred from the enjoyment of the beauties wherewith he had surrounded himself. When anything connected with horticulture was to be encouraged his generous disposition led him to aid it liberally and kindly. Himself a man of the simplest taste, plain and unostentatious in his mode of living, his happiness was to minister to others. No case of real distress ever came before him without drawing out his sympathy and ready help. One of the kindest, most single-minded, and tender-hearted of men, he seemed never to be so happy as when enabled to lighten the burden of others, but always did so quietly. He was one of those who

"Do good by stealth, and blush to find it fame."

Every society connected with horticulture that ever sought his help found it cheerfully given, and he leaves a gap which it will be impossible to fill. For many years he has been missed owing to ill health from

those gatherings of horticulturists he was once ever so pleased to be present at. We hoped against hope that he might one day be enabled to appear amongst us; but now all is over, we shall never again see his genial and striking face or listen to his kind and pleasant words, and I, amongst many others, shall miss a true and genuine friend. He has left behind him few to equal him and none to excel him in all those qualities which helped to make a good man and a sincere Christian. — D, *Deal*.



THE FRUITERERS' COMPANY.—At the last court of this Company Mr. John Eagleton was unanimously elected Clerk in place of his father, who resigned after worthily occupying the position for thirty years. Mr. John Eagleton worked with great zeal in connection with the Guildhall fruit show, and contributed not a little by his good judgment and activity to the success that was achieved.

— **CHISWICK GARDENERS' ASSOCIATION.**—We are pleased to learn that as a result of the recent concert held under the auspices of this useful body, four life members will be added in due course to the Gardeners' Orphan Fund. The profits, after paying all expenses, amounting to about £20.

— **AT the next annual meeting, on the 15th of January next, of the GARDENERS' ROYAL BENEVOLENT INSTITUTION,** there is no doubt that Mr. E. R. Cutler will be re-elected Secretary of the Institution for the fiftieth time. This has been considered a fitting opportunity for presenting him with some acknowledgement of his long and efficient services, and of the esteem in which he is held by all who have the welfare of the Institution at heart. Mr. Harry J. Veitch of the Royal Exotic Nursery, Chelsea, has undertaken the office of Secretary, and Mr. N. N. Sherwood, of Messrs. Hurst & Son of Houndsditch, that of Treasurer, and either of these gentlemen will be happy to receive subscriptions.

— **MR. F. W. BURBIDGE, Trinity College Botanic Gardens, Dublin,** sends us specimens of the hybrid *Calceolaria Burbidgei*, from *C. Pavoni* crossed with *C. fuchsiae-folia*, also the curious parasitic *Cuscuta reflexa*. This, Mr. Burbidge says, is "now growing and flowering against a wall out of doors, on *Jasminum revolutum* as a host-plant; 5° of frost is fatal to it. The *Calceolaria* is planted out in a greenhouse up a pillar, and is 10 feet high, and has been in bloom since August, and will flower till June next." [The *Calceolaria* is an extremely attractive and floriferous plant, with pale yellow flowers, but unfortunately the specimens were much damaged in transit. At Dublin last August it was one of the most showy plants flowering under glass.]

— **MESSRS. J. R. PEARSON & SONS, CHILWELL.**—In consequence of the great extension of their bulb and seed business in Nottingham, these well-known nurserymen and seedsmen are compelled to relinquish the premises in Exchange Row which they have occupied for more than half a century, and their town address henceforth will be Chapel Bars, Nottingham.

— **AS an evidence of the comparative MILDNESS OF THE SEA COAST,** even so far north as here. Dahlias were not destroyed by frost until the night of October 26th, while a short distance inland they were quite blackened about a fortnight previously. The weather is again mild, and Gladioli are still in flower.—S. ARNOTT, *Kirkcudbrightshire*.

— **GARDENING APPOINTMENT.**—Mr. John Smith has been appointed head gardener to Bernard Beer, Esq., Elmwood, Bickley, Kent.

— **THE DITTONS HORTICULTURAL AND INDUSTRIAL SOCIETY.**—The annual meeting took place recently, W. Whiteley, Esq., in the chair, when Mr. W. Palmer, gardener to W. F. Hume Dick, Esq., Thames Ditton House, was re-elected Secretary, and Mr. A. W. Cousins Treasurer. Interest attached to the meeting from the fact that the members made a presentation to Mr. Palmer of a handsome marble timepiece, which bore the following inscription:—"Presented to Mr

W. Palmer, in recognition of his efforts on behalf of the Dittons Horticultural and Industrial Society."

— **ANTHRACITE COAL.**—I notice you have drawn attention to the Hendreforgan Co.'s anthracite coal, and I should esteem it a favour if you would kindly do a similar kindness for my coal in your next week's issue.—J. T. PASCOE, *Swansea*. [Certainly; we try to be equally fair to all advertisers, and the testimony of good gardeners, including Mr. A. F. Barron, Chiswick, show that the coal in question has given them great satisfaction.]

— **STRAWBERRIES IN OCTOBER.**—In regard to my note on the above, I regret to say that what I expected duly came to pass. On the night of October 27th we had the severe frost, and next morning in inspecting my Strawberry quarters I found all the fruit frosted, and now there is quite a bushel of green fruit—I ought rather to say black now—all spoilt, and which but for that frost being so severe would for the most part have been ripe, or nearly so, the first week in November. Three fruits escaped, so I shall, after all, indulge in "Strawberries in November."—H. S. EASTY.

— **OCTOBER STRAWBERRIES.**—Your correspondent Mr. H. S. Easty, page 379, calls attention to the above, and which no doubt have been as plentiful as the proverbial Blackberries; but still these things are well worth recording for those who come after, and as an evidence of the beautiful autumn weather we have recently passed through, my experience is a confirmation of that related by Mr. Easty. The variety that was truly floriferous was *Vicomtesse Hericart de Thury*. Of *Gari-baldi* we have one piece facing south-east containing ninety plants, 2 feet apart. Seventy of those plants showed a good second crop of fruit, so much so that on October 13th I netted them for the second time, and from them I picked three nice little dishes of fruit, but the frosts of October 27th and 28th, 8° on the latter date, spoilt the remainder of a good fair crop of all sizes. *La Grosse Sucrée* showed a few flowers, but *Vicomtesse Hericart de Thury* was the only variety that produced autumn flowers and fruits in abundance. But I do not apprehend a bad summer crop in consequence of the present autumnal one when the time comes round. All being well, I will take notice and record the same.—R. MAHER, *Yattendon Court*.

— **THE WEATHER LAST MONTH.**—October was remarkable for the bright dry weather up to the 15th, with only one exception, the 7th. We had fourteen bright sunny days during the month, eight of which were clear. The first snow of the season fell on the 26th. Wind was in a westerly direction twenty-nine days. Total rainfall was 1.24 inch, which fell on ten days; the greatest daily fall was 0.20 inch on the 16th. Fog on two days amounted to 0.01 each day. Highest shade temperature was 69° on 4th and 14th; lowest, 22° on the 28th; lowest on grass, 17° on the 28th. Barometer was very variable, especially at the end of the month; highest was 30.53 at noon on the 22nd; lowest, 29.38 at 9 A.M. on 26th. The garden spring ran 15 gallons per minute on the 31st. Mean temperature of the month was 49.87°.—W. H. DIVERS, *Ketton Hall Gardens, Stamford*.

— **THE WEATHER DURING OCTOBER** has been all one could desire—beautiful days with an abundance of sunshine. Rain fell, as one might say, as it was required for all purposes. The nights for the most part being very genial and mild many of our summer-flowering plants remaining in bloom up to the end of the month, when a very sharp night or two ended summer. On the 31st one might have expected winter had begun, as a sharp snowstorm came unexpectedly upon us. The weather since has again become mild. The October of 1890 resembles in many respects the October of 1886, for during the autumn of 1886 I had not had sufficient frost by November 17th to kill either Dahlias or French Beans. Amount of rainfall for the past month as follows:—Number of days upon which rain fell are ten, against nineteen of 1889; maximum in any twenty-four hours being 0.67 on the 7th; minimum in any twenty-four hours being 0.04 on the 24th; total for the month being 1.87, against 3.66 of 1889.—E. WALLIS, *The Gardens, Hamels Park, Buntingford*.

— **BULLFINCHES.**—It may be as well to remind readers that these birds may be easily caught during the months of November and December, instead of allowing them to clear off every bud in some cases which have come under my notice, in January and February. They could be disposed of through the advertising columns of *Poultry*, and would pay better than shooting, besides damaging trees. Thirty-four have so far placed themselves under my care this autumn in my orchard and

garden in trap cages, against forty-two last winter, and some fruit growers will understand what that represents in buds saved to somebody. A pair in spring will clear a moderate sized Plum tree in a few minutes. If ladies are determined to have birds for trimmings for hats why not have bullfinches? I saw a row hung up with vermin in Witley Gardens last summer, which might have been used instead of hanging by the neck.—J. HIAM.

— THE ROYAL HORTICULTURAL SOCIETY'S meeting on Tuesday last was not well attended, owing to the number of shows elsewhere on the same day. Messrs. Sutton & Sons, Reading, had a fine collection of Primulas (silver medal); and Messrs. Rivers & Son, Sawbridgeworth, sent a large collection of Apples and Pears (silver-gilt medal). Orchids were shown by Messrs. Sander & Co., St. Albans; Linden of Brussels; and Cookson of Wylam-on-Tyne. Mr. A. Waterer had first-class certificates for Knap Hill Scarlet Oak, and *Vaccinium pennsylvanicum*, both very effective, with bright red leaves.

— URCEOLINA AUREA PENDULA.—This is a plant both useful and beautiful, but not generally met with. It produces its flowers on scapes, from the top of which they hang in a very graceful manner, so that each can be removed as it opens to be used for bouquets or glasses in rooms, so that each scape produces a supply of newly opened flowers for a considerable time. The colour is also an uncommon one, being a mixture of green and yellow; it contrasts with most colours, and the flowers last well when cut. As plants in pots they are highly decorative for rooms or halls. They are a little shy to cultivate. We have seen them kept in a greenhouse all the year round with considerable success, but we keep ours in the stove in company with the *Pancreatiums* and *Eucharises*. Diminish the supply of water to a greater extent than for most stove-flowering bulbs; in fact, I have found aurea to flower better when completely dried off like *Amaryllises*. The soil used for potting them should be lumpy, say one-half fibry turf and the other half charcoal, sheep droppings, or cow manure, and plenty of sand, and potted very firmly in well drained pots. They like plenty of light, but no direct sunshine.—H. E.

— THE NATIONAL SOCIETY'S CATALOGUE.—We have received a copy of this useful work of upwards of 100 pages. It is something more than a catalogue, for it contains a condensed history of the Chrysanthemum, and a list of books, pamphlets, lectures, &c., which have been published from time to time respecting the "Golden Flower." Several of these are out of print, and the addresses of the authors or proprietors of some are omitted, but not all. A few good hints are given to exhibitors of new varieties. Beauty of Hull is stated to be so similar to H. Shoesmith, under certain conditions, that it would not be safe to exhibit them in the same stand as distinct varieties. Similar advice is given in respect to John Lambert and Emily Dale (or Golden Queen of England), also John Doughty and Bronze Queen. John Doughty is considered to be a superior form of Bronze Queen, and John Lambert the best type of Golden Queen, but the differences are not always sufficiently marked to ensure against disqualification if either of the two pairs are staged together as distinct. Prudent exhibitors will not run the risk suggested. The list of varieties given is very comprehensive, and the catalogue is a good guide to exhibitors and framers of schedules. It can be obtained from the Secretary, Frampton Park Nurseries, Hackney, at the usual price.

— LIVERPOOL HORTICULTURAL ASSOCIATION.—The first meeting of the session was held in the Museum, William Brown Street, last Saturday evening. Mr. Thomas White, Chairman, presided, and he was supported by Mr. Powell (Vice-Chairman), Mr. Blackmore (Sub-Treasurer), and Mr. Edward Bridge (Secretary), and a fair attendance of members only, owing to the very wet weather. In his opening remarks the Chairman spoke of the excellent results of such meetings, and the great knowledge that was spread in all directions. He regretted very much that many more young men did not try for the certificates offered by the Association for articles on various horticultural subjects, and went on to mention that Mr. Ker of the Aigburth Nursery had very generously offered three guineas for papers on the following subjects—viz., "Cool Orchids, and their Cultivation," "Calceolarias Cinerarias, and Primulas," and "Vegetables." The Judges selected a paper written by Mr. Atkins, foreman in the gardens at Ketton, Aigburth, which had for its title "The Culture of Vegetables for Use November to May, and the Most Profitable for a Garden of One Statute Acre." The paper, which was a really good one, was read in a clear style by Mr. Atkins, who was accorded a hearty vote of thanks.—R. P. R.

THE NATIONAL CHRYSANTHEMUM SOCIETY.

CENTENARY FESTIVAL.—NOV. 11TH, 12TH, 13TH, AND 14TH.

THE long anticipated Exhibition at the Royal Aquarium, Westminster, in celebration of the Chrysanthemum Centenary, was opened on Tuesday last by Lady Brooke, the President, Lord Brooke, being unavoidably absent. In the number and quality of the exhibits the Show fully equalled the expectations of the most sanguine, and far exceeded what the majority anticipated would be the result of such a peculiar season. Such numbers of cut blooms and specimen plants have never been provided before at any show in this country, and in a more convenient building an extraordinary effect could have been secured. The whole of the large hall on the basement was filled with groups, plants, and cut flowers. St. Stephen's Hall was similarly occupied, as well as including the floral decorations, an extremely beautiful feature, while one of the galleries the whole length of the building was devoted to vegetables and fruit. Upon the ground floor the effect was necessarily broken and crowded, a good general view of the Show being impossible from any one point. These were defects that were practically unavoidable under existing arrangements, but they were none the less deplorable because they detracted from a show of remarkable magnitude and great excellence.

THE CUT BLOOMS.

The great attraction in this section was the Centenary class for twenty-four incurved and twenty-four Japanese, distinct, open to all competitors, the prizes being £25, £20, £15, £10, and £5. In this there were eighteen competitors, and the exhibits constituted a show in themselves. The premier award was easily won by Messrs. W. & G. Drover, Fareham, Hants, who had wonderfully fine, deep, solid, well built, clear, and fresh incurved blooms, the best seen this year; the Japanese also were fresh and bright, but they were not so weighty as the incurved, several blooms being decidedly weak. The varieties were as follows. *Incurved*.—Beauty, Mrs. Heale, Prince Alfred, Lord Leicester, Alfred Salter, Mrs. N. Davis, a grand bloom; Emily Dale, Princess of Wales, Alfred Lyne, John Doughty, Violet Tomlin, Lady Dorothy, Empress of India, Empress Eugénie, Mrs. W. Shipman, Queen of England, Nil Desperandum, Jeanne d'Arc, Golden Empress, Miss M. A. Haggas, Lady Hardinge, Mrs. Coleman, C. Gibson, and Princess of Teck.

Japanese.—Mrs. C. H. Clarke, Sunflower, Madame Baco, Pelican, Baronne de Prailly, Comte de Germiny, Mrs. C. W. Wheeler, Ralph Brocklebank, Mrs. Alpheus Hardy, very fine; Avalanche, M. Bernard, Criterion, E. Molyneux, Stanstead White, Jeanne Délaux, Boule d'Or, Mrs. F. Jameson, M. E. A. Carrière, Etoile de Lyon, Lady T. Lawrence, Sarah Owen, Meg Merrilies, Gloriosum, and Condor. Mr. Richard Parker, gardener to J. Corbett, Esq., Impney, Droitwich, was second with a good back row of incurved and twenty-four fine Japanese very close in merit to the first.

Mr. Charles Gibson, gardener to J. Wormald, Esq., was placed third with compact neat incurved of moderate size, but fresh, his Japanese being very even and bright. Mr. John Lambert, gardener to Col. Wingfield, Onslow, Shrewsbury, was fourth, his best blooms being a good Lord Leicester and Sunflower. Mr. James Myers, gardener to the Earl of Sandwich, Henningbrooke, Huntingdon, was fifth.

The Society's challenge vase class for forty-eight blooms, twenty-four incurved in not less than eighteen varieties, and twenty-four Japanese, distinct, was also a good one, but it was a surprise to many that the St. Neots Society proved successful in gaining the coveted honour with creditable blooms in both stands, the following varieties being represented.

Incurved.—Lord Wolseley, Mrs. S. Coleman, Lord Wolseley, Miss Haggas, Queen of England, Emily Dale, Alfred Salter, Golden Empress, Miss Haggas, Empress Eugénie, Mrs. Heale, Prince Alfred, Lord Leicester, Mrs. S. Coleman, Jeanne d'Arc, Violet Tomlin, Princess of Wales, Mabel Ward, Mrs. Shipman, Novelty, Violet Tomlin, Prince of Wales, Eve, Queen of England.

Japanese.—Madame C. Audiguier, Mrs. H. Cannell, Sunflower, Etoile de Lyon, Avalanche, Geo. Daniels, Stanstead White, Madame Baco, Meg Merrilies, E. Molyneux, W. G. Drover, Criterion, Lady T. Lawrence, Triomphe de la rue des Châlets, Ralph Brocklebank, Val d'Andorre, Sarah Owen, Maiden's Blush, Jeanne Délaux, Thunberg, Mons. Bernard, Madlle. Laeroix, Volunteer, and Gloriosum. The Wimbledon Horticultural Society was second, and the Cheshunt Chrysanthemum Society third. The Hayes Horticultural Society also competed, the blooms good but smaller.

The most important class for incurved was for forty-eight blooms, in not less than twenty-four varieties, and a very fine display of blooms was in competition. Mr. Ray, Mount Pleasant Nursery, Teynham, near Sittingbourne, was first with a stand of considerable merit. There were few blooms of exceptional quality, but the collection was a smooth, even, and excellent one. The varieties were as follows—Back row: Empress of India (three), Lord Wolseley, Golden Empress (three), Emily Dale (three), Lord Leicester (three), Alfred Salter, Queen of England, and Alfred Salter. Middle row: Mr. Brunlees, Jeanne d'Arc (two), Violet Tomlin (two), Mrs. Heale, John Salter, Empress Eugénie (two), Miss M. A. Haggas (two), Hero of Stoke Newington, Princess of Wales (two), Lord Wolseley, and Guernsey Nugget. Front row: Lady Hardinge (two), Chas. Gibson (two), Princess Beatrice, Barbara (two),

Princess Teck (two), Mrs. N. Davis, Lady Dorothy (two), Mrs. Shipman (two), Hero of Stoke Newington, and Mr. Brunlees. The second prize went to Mr. R. Parker, gardener to J. Corbett, Esq., Impney, Droitwich, for a very fine, but somewhat uneven stand, Golden Empress, Lord Alcester, and Violet Tomlin being among the best examples. The third prize went to Mr. H. Shoesmith, gardener to M. Hodgson, Esq., Shirley, Croydon, for fresh but somewhat small flowers.

Mr. M. Sullivan, gardener to D. B. Chapman, Esq., Roehampton, showed in his usual good form in the class for twenty-four incurved, and was placed first. His flowers were not noteworthy for size, but were very smooth and admirably finished, Jeanne d'Arc, Beauty, Miss Haggas, Princess of Wales, and Violet Tomlin being capital examples. E. Sanderson, Esq., Harlesden, was a close and very meritorious second, his blooms closely corresponding in character with those of Mr. Sullivan, being medium in size, bright, fresh, and well coloured. Mr. Ives, gardener to E. C. Jukes, Esq., was third. Incurved, staged with foliage for the Veitch Memorial award and other prizes were best shown by Mr. Blick, gardener to Martin R. Smith, Esq., Hayes Common, but they were too stiff to be very attractive. For decorative effect the flowers are best in bunches. Mr. Sullivan was second.

In class 6, for eighteen incurved, excluding the Queen family, the first prize was presented by the proprietor of the *Journal of Horticulture*, neatness and symmetry to be considered rather than size. It brought some very beautiful blooms. Messrs. W. & G. Drover, Fareham, were placed first for a collection of great beauty, the flowers being perfect in smoothness, freshness, and finish. Mr. M. Sullivan was second, and Mr. M. Russell third. Mr. E. Brown, gardener to E. E. Barclay, Esq., Raydon, Essex, was first with twelve incurved blooms in class 8, a fairly smooth and even display of flowers, and very fresh. It included a fine Empress of India and a very neat example of Barbara. Mr. H. A. Page, gardener to T. Crisp, Esq., New Southgate, was second, Lord Alcester and Lord Wolseley being the two best blooms, though Violet Tomlin was also good. Mr. C. Edwards, gardener to W. Owen, Esq., Ealing, was third. In the other class for twelve incurved, Mr. Lees, gardener to the Duchess of Montrose, Sefton Lodge, Newmarket, won with a very pleasing stand, the flowers being very even in excellence, though perhaps Lord Wolseley, Alfred Salter, and Emily Dale were the best. Mr. J. Cox, gardener to J. Trotter, Esq., Hertford, was second, Alfred Salter and Violet Tomlin being very good. Mr. Calvert, gardener to J. Archer Houlton, Esq., Great Hallingbury, was third. Mr. Cox improved on his position with six blooms of one variety, and won Mr. Colechester's first prize with a neat stand of Golden Empress, not large, but fresh and well coloured. Mr. Calvert was second with a very meritorious stand of Princess of Wales, and Mr. W. Collins, gardener to J. W. Carlisle, Esq., Hertford, was third with Miss M. A. Haggas. In class 10, for six blooms of the incurved Mrs. S. Colman, the silver Centenary medal was won by Mr. Russell, gardener to Dr. Lewis, Henfield, with a beautiful lot of flowers, large, and well finished. Mr. R. Owen's prize and the silver Centenary medal for the six best blooms of John Lambert, were won by Mr. J. Lambert, gardener to Colonel Wingfield, Shrewsbury, with a grand lot of flowers, 100 per cent. in advance of the others.

Japanese, forty-eight blooms, produced a large number of excellent stands. The first prize went to Mr. Hawkins, gardener to W. H. Fowler, Esq., Claremont, Taunton, whose flowers were more noteworthy for freshness and finish than mere size. The varieties were as follows:—Back row—Etoile de Lyon (two), Fair Maid of Guernsey, Stanstead Surprise, Japonais, Ralph Brocklebank (two), Fimbriatum, Mrs. H. Cannell, Carew Underwood, Puritan, Baronne de Prailly, Stanstead White, Boule d'Or, E. Molyneux, and Sunflower. Middle row: Mrs. Falconer Jameson, Madame Baco, Album Fimbriatum (two), Meg Merrilies, Madame C. Audiguier, Avalanche, Soleil Levant, Mdle. Blanche Pigny, Stanstead Surprise, Puritan, Sunflower, Mrs. J. Laing, Stanstead White, Japonais, and Avalanche. Front row: Mr. H. Cannell (two), Lady Lawrence (two), L'Or du Japon, Val d'Andorre, Sarah Owen, La Vanité, Mrs. Wheeler, Moonlight, Mons. Freeman, Geo. Daniels, Mons. H. Elliott, Mons. Bernard, Golden Dragon, and Mrs. J. Laing. Messrs. W. & G. Drover followed very closely, indeed there could have been very few points between the two. Messrs. Drover had a very fine and richly coloured collection. Mr. G. King, gardener to W. Macfarlane, Esq., Rickmansworth, was third with smaller flowers. The first prize for twenty-four blooms also went to Mr. Hawkins, this stand containing fine examples of Sunflower, E. Molyneux, Baronne de Prailly, and Mr. H. Cannell amongst others. Mr. C. J. Waite, gardener to Col. the Hon. W. P. Talbot, Esher, was second with a fair stand, and Mr. B. Calvert third.

Mr. H. Brown won with twelve in class 15, having large and handsome flowers. Mr. T. Bettesworth, gardener to R. Ewing, Esq., Cheshunt, was second, and Mr. G. Hawkins third. With twelves in class 16, Mr. Doughty, gardener to Mrs. Tomlin, Cranbrook, Kent, was a good first. He had fine blooms of Sunflower, Etoile de Lyon, Mrs. E. W. Clark, and Mons. Bernard. Mr. W. H. Lees was second, and Mr. J. Myers, gardener to the Earl of Sandwich, Huntingdon, third, both neat stands. With six white Japanese, one variety, Mr. Bettesworth won, having a neat lot of Avalanche. Mr. Hewitt, gardener to H. P. Mackeson, Esq., Hythe, was second with a fine stand of Stanstead White, and Mr. H. Brown third with Meg Merrilies. For six of any other colour, Mr. Myers was first with a grand lot of Etoile de Lyon, Mr. C. Cox second with Mrs. Wheeler, and Mr. Calvert third with Mr. H. Cannell. Mr. Neville, gardener to F. W. Flight, Esq., Winchester, appeared to be the only exhibitor for Messrs. Laing's special prizes, and the first was awarded to him, the varieties shown being Stanstead White, Stanstead

Surprise, Album Fimbriatum, Mrs. J. Wright, and Bertha Flight. Japanese with foliage were more attractive than the incurved in a similar class. Mr. Arthur Payne, gardener to Mrs. Smith, Emsworth, won with a very attractive stand; Mr. M. Sullivan being second, and Mr. C. Blick third.

The best stand of twelve reflexed came from Mr. Russell, his King of Crimson, Cullingfordi, Cloth of Gold, and Pink Christine being very fine. Mr. R. C. Nottcutt, Ipswich, was second, his best examples being Cloth of Gold, of which he had a good pair of flowers, and White Christine. Mr. F. Moore, gardener to W. C. Pickersgill, Esq., Bexley, was third.

C. E. Shea, Esq., Fooks Cray, Kent, won with Japanese reflexed, his varieties being La Triomphante, J. Délaux, Mons. Astorg, Val d'Andorre, Criterion, Maiden's Blush, and L'Adorable. Mr. Hill, gardener to F. D. Brockman, Esq., Hythe, was second, and both had good and interesting stands.

Mr. Sullivan, gardener to D. B. Chapman, Esq., Roehampton, was first with twelve Japanese Anemone-flowered, a very good stand, comprising a beautiful Mdle. Cabrol, while Madame Blanche, Dame Nelson, Sabine, and Fabian de Mediana were also excellent. Mr. Ives, gardener to E. C. Jukes, Esq., was a good second, though his flowers were much smaller. He did better with large-flowered Anemones, winning with a meritorious stand, in which Grande Alveole, Lady Margaret, and Miss Annie Lowe were conspicuously good. Mr. C. J. Salter, gardener to T. B. Haywood, Esq., Reigate, was second. He had a very good Lady Margaret, Ruche Toulousain, and Grande Alvéole. Mr. M. Sullivan was third, and Mr. M. Russell was commended.

Mr. Shea was first for twelve Japanese incurved, his excellent stand being composed of Pelican, Japonais, H. Cannell, Boule d'Or, E. Molyneux, Mrs. H. Cannell, Mrs. Wheeler, and Golden Dragon. Mr. Turner, gardener to E. P. Monckton, Esq., Stamford, was second. Mr. W. B. Carpenter, Gravesend, won with Anemone Pompons in threes, very neat and attractive, Messrs. Salter and Cornish of Enfield following. The best lot of Pompons came from Mr. M. Russell, and they were unquestionably a very fine stand; Rubrum Perfectum, Mons. Hoste, Elise Dordan, and President were particularly good. Mr. Neary, gardener to the Rev. H. Powell, was a good second, and Mr. J. Agate, Havant, third.

Tables of bouquets, wreaths, &c., illustrating the decorative value of Chrysanthemums, made a magnificent display, the class being far and away the most beautiful feature of the whole Exhibition. Several grand exhibits were arranged, and it was only after a close struggle that the premier award could be made. It went to Messrs. Perkins and Sons of Coventry, whose display was a most beautiful one. At the back was an enormous wreath of white Chrysanthemums and mirrors with sprays of flowers upon them. In the front were large bouquets and stands of flowers, smaller ones being placed amongst them, and sprays laid upon the cloth. It would not be easy to imagine a more charming table of flowers than this. The second prize arrangement of Mr. J. R. Chard, Brunswick Nursery, Stoke Newington, was little less attractive. A heart and an anchor of flowers, with baskets, epergnes, and arches composed a splendid exhibit. Mr. G. Newman, Bromley, Kent, was third, also with an admirable arrangement, and Mr. S. Edwards was highly commended. For the best vase or epergne Mr. Chard was placed first; Mr. Chadwick, gardener to E. M. Nelson, Esq., Ealing, second; and Mr. Edwards third. Mr. D. B. Crane, Highgate, was first for three bouquets, a trio that did him very much credit as an amateur; Mr. Chard was second, and Mr. Chadwick third.

PLANTS.

These can only be briefly referred to here, but it must be said that they were of remarkable merit throughout, and a great improvement was manifest in all the classes. The date fixed seemed to suit them admirably, and this was taken into consideration when the second week was selected. Mr. G. Stevens of Putney repeated his success at the local Show by winning the premier prize with excellent plants, well arranged. Messrs. J. Laing & Sons, Forest Hill, were second, also with a handsome group; Mr. J. Townsend, Putney, was third; and Mr. H. J. Jones, Camberwell, Ryecroft Nursery, Lewisham, fourth, all showing well.

In the class for a group under 5 feet in height Messrs. Reid and Bornemann were first with dwarf even plants and good blooms well arranged. Mrs. W. Holmes, Frampton Park Nursery, was a capital second, the plants being even dwarfer than the first prize lot and flowers of good quality. For twelve bush specimens Mr. E. Easey, gardener to J. W. Jones, Esq., The Grange, Highbury New Park, was first with rather rough plants and inferior blooms. Mr. Viney was second.

In the class for four trained specimens Mr. Clark, gardener to W. H. Lile, Esq., Brixton Hill, was first with large well-bloomed plants, including a good example of Etoile de Lyon. Second, Mr. W. Davey, gardener to C. C. Paine, Esq., Stamford Hill, with clean bright plants trained in a bush form. Third, Mr. Donald, whose group contained a fine coloured La Triumphant. With six standard trained specimens Mr. D. Donald won first place and the Veitch medal with grand well-trained, well-flowered plants, very fresh and bright in colour. The varieties were E. Molyneux, Chinaman, Stanstead Surprise, and Mad. E. Audiguier. Mr. Davy was second with a good Bertier Rendatler. Third, Mr. T. Richardson, gardener to Sir Jas. Ferguson, Bart., with good plants, the blooms standing out more naturally than the others. In the class for four trained standards, Mr. Donald first with clean fresh plants. Second,

Mr. Richardson. Third, Mr. Clark. In the class for six trained Pompons Mr. J. Weston was placed second, and Mr. Clark third.

In the class for nine trained specimens Mr. J. Brooks, gardener to Walter Reynolds, Esq., The Grove, Highgate, won the first prize and the silver cup offered by Messrs. Wood & Son of Wood Green, London. This group of nine plants were truly magnificent specimens, some of the plants measuring 6 feet in diameter and covered with flowers. Chinaman, Miss Gorton, Bertier Rendatler, and W. Robinson were the best. Mr. D. Donald, Leyton Green, Essex, was second with good plants, the great objection being the white sticks used in training. Mr. Weston, gardener to D. Martineau, Esq., Clapham Park, was third with fresh even plants, the best being L'Isle des Plaisirs. For six trained specimens Mr. W. Clark was first with six evenly trained and well bloomed, Jupiter, Source d'Or, and La Triumphant, very fine. Second, Mr. Walker, gardener to A. Heaver, Esq., with three good incurved varieties Mr. Rundle, Mrs. Dixon, and Prince of Wales, good. Third, Mr. Davey, with a nice highly trained bush-shaped W. Robinson.

Miscellaneous.—One of the most extensive and varied of the miscellaneous exhibits was the collection of flowers from Messrs. H. Cannell and Sons of Swanley. It comprised a large number of their fine Zonal Pelargoniums, bunches of their charming pure white double Begonia Oetavie loosely arranged in bunches with their own foliage, forming one of the most delightful exhibits in the Exhibition; and a fine display of Chrysanthemums, many of the best varieties being represented by several flowers instead of by one bloom. There was also a large stand of their new bronzy incurved variety Robert Cannell. Messrs. W. Wood and Son had a large stand of horticultural sundries, including various soils, fertilisers, insecticides, &c.; a well arranged and interesting display. Messrs. R. Beale & Co., New Southgate, exhibited plants of Chrysanthemums struck from leaves last November, and also horticultural sundries. Mr. R. Owen, Maidenhead, exhibited stands of English seedling Chrysanthemums, amongst them being a large and beautiful pure white single variety named Miss A. H. Bates, and a Pompon with orange flowers hardly larger than those of Ranunculus aconitifolius fl. pl. A Japanese named Eugène Giat was very telling in colour, rich warm crimson. Mr. G. Wythes, gardener to the Duke of Northumberland, Syon House, Brentford, had a stand of cut blooms arranged for effect with Ferns, small Dracaenas, &c., and they were extremely attractive. Mr. W. Colchester, Ipswich, exhibited a stand of his Ichthemio guano. Mr. H. George, Putney, had a stand of horticultural sundries, also some fine bunches of Gros Colman Grape grown with Thomson's Vine manure.

A charming lot of Chrysanthemums also came from Mr. E. Molyneux, gardener to W. H. Myers, Esq., Bishops Waltham. They were chiefly composed of Pompons and singles, and were clustered loosely in vases with their own foliage, making a very pretty and pleasing arrangement.

The amateurs' and metropolitan classes were well filled, but we cannot refer to them this week. The fruit and vegetable classes, which also formed so important a portion of the Show, must be passed for a similar reason—insufficient space.

KINGSTON-ON-THAMES.—NOVEMBER 11TH AND 12TH.

WHEN it was found that the National Chrysanthemum Society's Show was fixed on the Kingston date some fears were entertained that the last named exhibition would be weakened in consequence. Such has not been the case, for never has a finer display been seen in the Drill Hall of the old town on the banks of the Thames. Specimen plants and groups were both more numerous and finer than usual, and the cut bloom classes were admirably filled. The blooms, moreover, were marked by an uniformity of excellence that is not often seen, and the general quality of all sections was very high indeed. The winners well won their honours, and the losers are to be complimented in running them so closely. Only the briefest report can be given of this excellent Show, to which variety was imparted by superior floral decorations and very fine fruit.

Primary attention naturally centred in the cut bloom classes, and especially in the 25-guinea cup competition. For this trophy and good prizes offered five exhibitors staged forty-eight blooms in distinct varieties, the winners being placed in the following order:—First, Mr. C. Beckett, gardener to F. H. Bryant, Esq., Juniper Hill, Dorking; second, Mr. G. Carpenter, gardener to Major Collis Browne, Broad Oaks, Byfleet; third, Mr. W. Mease, gardener to A. Tate, Esq., Downside, Leatherhead; fourth, Mr. J. Quarterman, gardener to C. E. Smith, Esq., Silvermere, Cobham. The blooms in the winning stands were as follows:—Incurved, back row: John Lambert, Lord Alcester, John Salter, Empress of India, Golden Empress, Alfred Salter, Mrs. S. Coleman, and Queen of England. Middle row: Mrs. Heale, Violet Tomlin, Miss Haggas, Prince Alfred, Princess of Wales, John Doughty, Jeanne d'Arc, and Lord Wolseley. Front row: Mrs. W. Shipman, Eve, Beauty, Barbara, Refulgence, Mrs. Brunlees, Mrs. N. Davis, and Lady Hardinge. Japanese:—Back row: Condor, M. C. Audiguier, E. Molyneux, Boule d'Or, Stanstead Surprise, Stanstead White, Val d'Andorre, and Etoile de Lyon. Middle row: Jeanne Délaux, Sunflower, Lady Penzance, Madame Baco, G. Daniels, Mons. H. Elliot, Mr. R. Brocklebank, and Avalanche. Front row: Sarah Owen, Mlle. Blanche Pigny, Mons. Bernard, Belle Paule, Marguerite Marrouch, Fimbriatum, Balmoreau, and Soleil Levant.

In the class for twenty-four incurved varieties, distinct, the prizes were adjudged—First to Mr. W. Mease. Second, Mr. E. Coombs, gar-

dener to W. Furze, Esq., Roselands, Teddington. Third, Mr. C. Beckett, gardener to T. H. Bryant, Esq., Juniper Hill, Dorking. Fourth, Mr. G. Woodgate. The blooms in the first prize stands comprised—Back row: Lord Alcester, Jeanne d'Arc, John Salter, Queen of England, Golden Empress, Violet Tomlin, Emily Dale, and Princess of Wales. Middle row: Mrs. S. Coleman, Mrs. W. Shipman, Mrs. Heale, Mrs. Norman Davis, Empress of India, Miss M. A. Haggas, Hero of Stoke Newington, and Lady Dorothy. Front row: Princess of Teck, Lord Wolseley, Princess Beatrice, Cherub, Jardine Yellow, Charles Gibson, Mr. Brunlees, and Empress Eugénie. In the corresponding class for twenty-four Japanese, the winners were—First, Mr. R. Cawte, gardener to J. P. Robinson, Esq., Brookleigh, Esher. Second, Mr. W. Mease. Third, Mr. G. Holden, gardener to C. W. Izod, Esq., The Lammas, Esher. Fourth, Mr. C. Beckett. The varieties in Mr. Cawte's first prize stand consisted of—Back row: E. Molyneux, Japonais, Stanstead White, Val d'Andorre, Sunflower, Mrs. C. Wheeler, R. Brocklebank, and Etoile de Lyon. Middle row: Mr. Cannell, Baronne de Prailly, Criterion, Condor, Stanstead Surprise, Avalanche, Jeanne Délaux, and Lady Lawrence. Front row: Sarah Owen, Mrs. J. Wright, M. Marrouch, Album Fimbriatum, Golden Dragon, Mrs. F. Jameson, Volunteer, and Maiden's Blush.

In the class for twelve incurved varieties the winners were—first Mr. R. Cawte; second Mr. W. Higgs, gardener to Mrs. Bryant, Woodlands Park, Leatherhead; third Mr. A. Felgate, gardener to Duchess of Wellington, Burhill, Walton-on-Thames; fourth Mr. C. Slade, gardener to Lady Bowater, Richmond Park. The successful exhibitors of twelve were—first Mr. W. Higgs; second Mr. A. Felgate; third Mr. W. Sutton, gardener to J. S. Sassoon, Esq., Ashley Park, Walton; fourth Mr. A. Turner, gardener to C. T. Murray, Esq., of Woodcote Hall, Epsom. The competition in these classes was extremely keen, and the stand good throughout.

The reflexed class of twelve blooms, not more than two of any one variety, was well filled, and many splendid blooms were staged. The winners were:—First, Mr. G. Carpenter. Second, Mr. R. Cawte. Third, Mr. W. Mease. The varieties in first prize stand were:—Back row: Amy Furze, Cloth of Gold, Amy Furze, Cloth of Gold. Middle row: King of the Crimsons, Pink Christine, Cullingfordi, Pink Christine. Front row: Mrs. Forsyth, Cullingfordi, Peach Christine, and Golden Christine. In the twelve Anemone flowered class the honours fell:—First to Mr. G. Carpenter; second, Mr. E. Coombs, gardener to W. Furze, Esq., Roselands, Teddington; third, Mr. C. Slade, for stands of nearly equal merit. The varieties in the first prize stand were:—Back row: Lady Margaret, Nouvelle Alvéole, Lady Margaret, Nouvelle Alvéole. Middle row: Mrs. Taylor, Miss Ann Lowe, Laing's Anemone, Miss Ann Lowe. Front row: Grande Alvéole, Fleur de Marie, J. Thorpe, jun., and La Marguerite.

Twelve Japanese, Anemone flowered.—First, Mr. G. Woodgate, gardener to Lady Wolverton, Coombe Wood, Kingston. Second, Mr. G. Carpenter. The varieties in first prize stand were—Back row: Fabian de Mediana, Jeanne Marty, Fabian de Mediana, Jeanne Marty. Middle row: Margaret Villageoise, Fabian de Mediana, Jeanne Marty, M. Cabrol. Front row: M. Lebecqz, F. Clos, M. Lebecqz, and M. Villageoise. Twelve bunches Anemone Pompons.—First, Mr. W. E. Clark, gardener to A. Nagle, Esq., Bijou Cottage, Kingston. Second, Mr. G. Woodgate. Third, Mr. C. Slade. With twelve Pompons Mr. Woodgate secured the chief position with splendid triplets.

In the six blooms of one variety class, incurved, Mr. Carpenter was first with Golden Queen of England; Mr. J. W. Reed second with Empress of India; and Mr. Felgate third with Princess of Wales. In the corresponding Japanese class Mr. Felgate first with Etoile de Lyon; Mr. Carpenter second with the same variety; and Mr. Cawte third with E. Molyneux. The special prizes given by Mr. Sisson Hyde for twenty-four blooms (eight Jap, eight incurved, eight reflexed) were won as follows:—First Mr. W. Mease, second Mr. A. Felgate, third Mr. G. Woodgate; all with excellent contributions. Three prizes, given by Major Collis Browne for twenty-four blooms (twelve incurved, twelve Japanese) were won by—first Mr. R. Cawte; second Mr. A. Felgate; third Mr. W. Palmer, gardener to Right Hon. Hume Dick, Thames Ditton House, Surrey; all of them staging very well indeed.

Both the premier blooms in the Show were found in Mr. Mease's stand—namely, Lord Alcester and Etoile de Lyon.

Three splendid blooms of Mrs. Jameson and three of the new reddish-purple large Anemone W. G. Drover, exhibited by Mr. E. Molyneux, were certificated.

Groups and specimens were the best that have been arranged in the Drill Hall, and that is saying a good deal. In the group class Mr. H. W. Pitcher, gardener to Mrs. Dunnage, Albury House, Surbiton, was first; Mr. A. H. Rickwood, gardener to Dowager Lady Freake, Fulwell Park, Twickenham, second; and Mr. Dorset, gardener to Mrs. Welsh, West Cross, Kingston Hill, third. For three trained Japanese specimens Mr. R. Cawte was first with magnificent examples; Mr. W. Skeets, gardener to J. T. W. Ponsford, Esq., Lillesworth, Esher, also with fine specimens, second; and Mr. G. Sallows, Twickenham, third. For three trained incurved Mr. Cawte was first with grand specimens, Mr. Sallows second. Mr. Cawte was also first with Pompons, large free bushes, healthy and floriferous. Standards were never seen finer anywhere, Mr. Higgs securing the chief prize, but closely followed by Mr. Cawte.

It is quite impossible to give the awards in other classes, including those for fruit, table plants, epergnes, &c., and it must suffice to say that the productions were of marked excellence, and that the Show in its entirety was a credit to exhibitors, officials, and the town of Kingston.



THE NATIONAL CHRYSANTHEMUM SOCIETY.

MAY I be allowed to express the desirability (which is very generally felt among the patrons of the National Chrysanthemum Society) of obtaining a more fitting place to represent them in their annual Exhibition? The associations connected with the Aquarium are such as to debar very many of the supporters of the N.C.S. from taking part in it there. I feel sure that any loss that might be sustained through the removal would be more than fully made up elsewhere to the amount contributed by the Aquarium Company. Should there be any doubt about this, I should be pleased to contribute with others to meet any reasonable deficiency, and would offer £5 as a first instalment.—JAMES L. WOOD, *Wood Green*.

CHRYSANTHEMUMS—EXHIBITORS' MISTAKES.

I WAS interested in Mr. Molyneux's article on the above in last week's Journal, and I hope it may have the desired effect of causing some intending exhibitors to go about their preparations, &c., in a more steady and careful manner. There is another "Exhibitors' mistake" I should like to add to those mentioned by the above esteemed authority—namely, allowing themselves to be interrupted during their preparations by so many visitors. It is a common practice when an exhibitor of any note is known to be dressing his flowers for a number of gardeners to call upon him "to see how they look now they are cut." And when they have seen they still linger discussing the merits of this or the demerits of that, which distracts the operator's attention from his work when the time is very valuable to him. An exhibitor of experience knows that the shorter the interval which elapses between his flowers being dressed and placed before the judges the fresher they appear. Therefore he allows himself the time which he knows to be requisite to do the work well, and it is very annoying to be continually interrupted by callers. I forward this to you on the eve of the show season, hoping, should you publish it, that it may be the means of causing some of these wanderers to nurse their inquisitiveness until they can see them on the show day, and thus let the intending candidate for Chrysanthemum honours get through his work in peace and quietness.—J. TUNNINGTON, *Ripley Castle*.

CHRYSANTHEMUM JOHN DOUGHTY.

IN reply to your correspondent I would advise him not to stage John Doughty in the same stand as Bronze Queen of England, or John Lambert with Golden Queen. I think it has not been claimed for the new comers that they were distinct, but only superior in build, and that recommendation I shall be able to endorse. I have never grown a bloom of Bronze Queen fit to put on a stand, or Golden Queen approaching any of the other members of the family, but John Doughty, I think, will reward my effort after another season, and nothing could be more satisfactory than the manner blooms of John Lambert are developing.—S.

CHRYSANTHEMUMS AT THE PUBLIC PARKS.

HAVING a few hours' leisure I proceeded on Saturday, November 1st, to make an inspection of the various Chrysanthemum Shows open to the public in the metropolitan district. Commencing with the Temple Show, I was agreeably surprised to find such a fine show of blooms, especially after the late foggy weather. A few of the most noteworthy old varieties were Avalanche, Mrs. J. Wright, Stanstead Surprise, Maiden's Blush, Edwin Molyneux, La Triomphante, Hamlet, Elaine, and W. Holmes; whilst of new varieties Albert Victor, Madame Louise Leroy, and Mrs. Stephenson Clarke were most worthy of notice. Incurved varieties were not so good, the petals having a tendency to reflex, most noticeable in the Queen family, the reasons for which are, that the house being unheated and open at the sides to all weathers, it contains an atmosphere charged with excessive moisture, which is exceedingly detrimental to the perfect opening of incurved blooms.

At Battersea Park the large Palm house is entirely filled with a very good collection, effectively arranged with a quantity of Palms, which add much to the beauty of the flowers, and takes off that heaviness so noticeable in large groups of Chrysanthemums. In such a large collection, containing about 1500 well grown plants of the best varieties, it was difficult to make a selection. The most conspicuous were Edwin Molyneux, Avalanche, Sunflower, Cullingfordi, M. Weick filis, W. Holmes, Mrs. G. Rundle, George Glenny, and Mrs. Dixon, which are grown in quantity and massed, a system of staging that shows them to the best advantage. There were also good blooms of Prince Alfred, Lord Wolseley, Princess Beatrice, Prince of Wales, Queen of England, Empress of India, and Lord Leicester. The whole of the flowers were very fresh, and with careful attention will last in good condition for a considerable time.

Calling at Southwark on my return journey I saw a very creditable group, arranged in a span-roofed house. It contained some very good

specimens of Fair Maid of Guernsey, E. Audiguier, Edwin Molyneux, and W. Holmes, the last-named variety being grown in quantity. This collection is later than the others, and will be seen at its best in a week or ten days' time.

I regret that through pressure of business I was unable to visit Finsbury Park, where, from information received, there is an excellent display of bloom.—H. P.

CHRYSANTHEMUMS AT FROYLE PARK, ALTON.

FROYLE PARK, the residence of J. Murray Robertson, Esq., has become during the last few years famous for its Chrysanthemums, and there is just now in the conservatory such a display as is seldom seen. The plants are grown on the large bloom system, four to six blooms on a plant, very dwarf, and arranged as they are in a long sloping group, with the Japanese and incurved varieties mixed, and the colours artistically blended, few plants could equal the Chrysanthemum for effect. The plants to be seen at Froyle are strong, well furnished, with healthy dark green foliage, and the buds were evidently taken at what is usually termed in gardening language "the right time." Among the Japanese varieties I noticed superb blooms of Etoile de Lyon, Avalanche, Stanstead Surprise, Edwin Molyneux, Mr. Orchard, Marsa, Phœbus, Mr. J. M. Pigny, Boule d'Or, Golden Dragon, &c., and although all are good, the best of the incurved are represented by Queen of England, extra good; the Empress family, Princess of Wales, Violet Tomlin, Jeanne d'Arc, Prince Alfred, and Lord Wolseley. Mr. Coster evidently thoroughly understands the culture of the Chrysanthemum, but attributes his success in a great measure to the kindness and liberality of Mr. Robertson. Damping, the great enemy of the grower of specimen Chry-anthemum blooms, is almost absent from Froyle Park this season, and Mr. Coster thinks his preventive has been the use of Thomson's manure instead of the usual farmyard liquid. The side stages in this conservatory are filled with fine plants of Bouvardias in all the best known varieties blooming very freely.—G. TRINDER, *Dogmersfield Gardens, Winchester*.

NOTES IN IRELAND.

CONDOR.—This will probably go into the reflexed Japanese class, judging from a magnificent specimen before me (kindly sent by Mr. Crawford, Kileronagh Gardens, near Waterford), where so many of the best splendid varieties are already classed. He sends it to me to see how some of his largest blooms are damping off to illustrate the accuracy of Mr. Wright's propositions on that subject last issue. First as to its size. I have carefully measured the bloom before me, and find it 9½ inches in diameter, and when spread out nearly 20 inches around. I mention that to show the size this variety can be grown to. The petals are five-eighths of an inch across and wonderfully numerous in the centre. The outer petals are all white, while the centre ones have a rich shade of pinkish lilac very effective and telling.

DAMPING.—I have some fine blooms of Etoile de Lyon, Mrs. Falconer Jameson, Avalanche, Fair Maid, M. Freeman, Mr. and Mrs. H. Cannell, C. Orchard, Elaine, Criterion, and so on, besides a sport I shall immediately refer to, in my greenhouse, and none show signs of damping. This has set me thinking, as growers are not at all satisfied of the cause in each individual case. The worst cases I have always found where the feeding was most marked and continuous, especially with sulphate of ammonia. This does not refer to my friend above named, as I am unaware if he used liquid feeding of any kind. I have recommended another grower to use fire heat who apprehended damping, but he told me this might "rush" his exhibition blooms prematurely before the show. This there was no gainsaying, and thus the exhibitor is between two misfortunes. I have found keeping the temperature not much above 50° Fahr. did not cause my blooms to come prematurely on, and there has been no damping, but it is only fair to say I only grow as an amateur for my own amusement and information. I thoroughly agree with Mr. Wright in his contention that the time to take thought of damping is not now, when it is visible, but to take precautions beforehand. Thorough exposure to light and air in the summer and autumn, proper soil, manure and potting, and repotting, just at the right time, and so on as pointed out by Mr. Molyneux, are the real antidotes.

Since writing the above I have received a further note from Mr. Crawford, who is a large grower and cultivator, saying it was remarkable that those Chrysanthemums he had put into the houses, no matter how dry and how airy (and he had a few degrees of fire heat in the greenhouse) they continued to damp, while an extra collection for which he had not room indoors were placed under a temporary structure of sashes placed against a south wall not one had damped. They were fully open in front and the ends, and on those he says he must mainly depend. This is certainly suggestive.

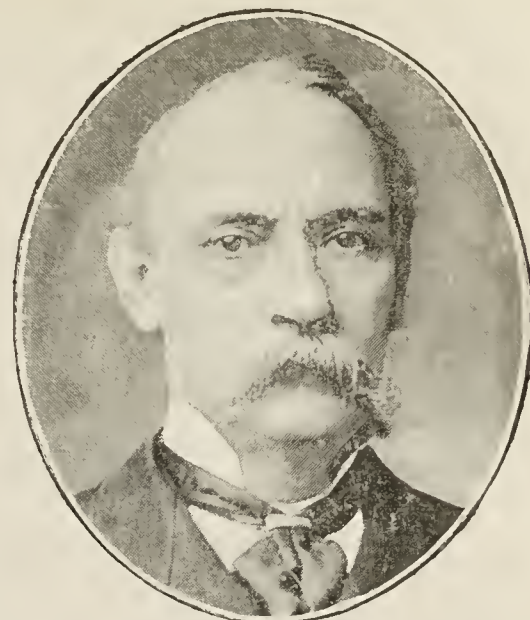
LADY CAMILLA.—At the Waterford Show last year I noticed seemingly a new variety in the stand of Hon. Dudley Fortescue, Summerville, as shown by Mr. J. A. Calthorpe. I procured one of the blooms and forwarded it to Mr. Wright for his opinion. He only saw it several days after being cut, and could only say it much resembled Etoile de Lyon (Cannell). At present I have a plant of both growing side by side in my garden, and though the colour of the blooms somewhat resemble, they are otherwise wholly different—the colour of the blooms in Lady Camilla even being a much deeper lilac tint. The height of the latter, too, is twice that of the former. Mr. Calthorpe cannot account for this ardent sport further than that it grew in the same pot with Mrs. Beale he had from Messrs. Carter.—W. J. MURPHY, *Clonmel*.



LADY BROOKE.



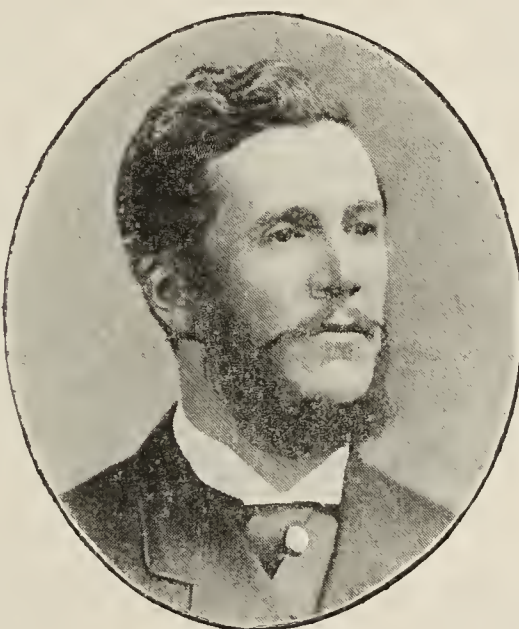
LORD BROOKE, M.P.



SIR W. GUYER HUNTER, M.P., K.C.M.G.



SIR EDWIN SAUNDERS, F.R.C.S.



MR. E. C. JUKES.



MR. R. BALLANTINE.

FIG. 56.—CHRYSANTHEMUM FESTIVAL PORTRAITS.

FOR the photograph of Lady Brooke represented above we are indebted to the courtesy of Walery of Regent Street, and Lord Brooke's portrait was kindly supplied by the London Stereoscopic Company. The others have been obligingly forwarded by their respective owners.

LADY BROOKE.—The consent of Lady Brooke to officiate at the opening of the National Society's Festival on Tuesday last contributed materially to its success, and the little ceremonial was most fitting for such an important occasion. Lady Brooke takes a great interest in horticulture, and possesses exquisite taste in floral arrangement and garden design, which is well displayed at her Essex residence, Easton Lodge, Dunmow. Roses and Chrysanthemums have long been cherished there, several cups and valuable prizes having been won by the products of those gardens.

LORD BROOKE, M.P.—As the honoured President of the National Society Lord Brooke deserves prominent notice here, and though he was unable to be present at the opening ceremony he has promised to preside at the banquet, and last year's experience at the annual dinner proved to everyone's satisfaction how admirably he can fill that office. Lord Brooke is an ardent horticulturist, and possesses a critical practical knowledge in all departments of an exceptional character.

SIR GUYER HUNTER, M.P., K.C.M.G.—Sir Guyer Hunter is one of the Members of Parliament for Central Hackney, and we believe it was due to his intimate acquaintance with and respect for the late Honorary Secretary, Mr. William Holmes, that he became connected with the National Chrysanthemum Society, first as a member, and then as a Vice-President. He was elected Chairman of the Conference to be held on Thursday, November 13th (to-day), and is also Chairman of the Holmes' Memorial Fund Committee.

SIR EDWIN SAUNDERS, F.R.C.S.—At Fairlawn, Wimbledon Common, Sir Edwin Saunders has amply proved how great a love he has for a beautiful garden, for it has the reputation of being one of the best kept and most picturesque of its size in the neighbourhood of London. To floriculture he is especially devoted, but he is also interested in fruit culture, having become a Vice-President of the British Fruit Growers' Association. The local societies owe much to his support, with several of which he is connected as patron or Vice-President. He was elected Vice-President of the N.C.S. a year or two ago, and was unanimously appointed Chairman of the Conference on Tuesday, November 11th.

MR. R. BALLANTINE.—None of the National Society's officials has performed so much useful and unassuming work in the past and present years as the Chairman of Committees, Mr. R. Ballantine. For many years he was the close friend of Mr. Holmes, was familiar with every detail, and within the past two months he has laboured incessantly to promote the object which his friend had in view, the success of the Centenary Festival. He has had the satisfaction of seeing his best wishes realised in the magnificent Show at Westminster, and it is to be hoped he will long give the Society the benefit of his experience and aptitude for business. He has been appointed Treasurer of the Holmes' Memorial Fund.

MR. E. C. JUKES.—The Vice-President of Committees is a very popular officer. He possesses remarkable adroitness in Committee work, and knows exactly how to turn a troublesome contention into the right channel. As an amateur cultivator of Chrysanthemums he has especially applied himself to the large and Japanese Anemones with considerable success, and at the Centenary Show he obtained a first prize for a stand of the former in a good competition.

CHRYSANTHEMUM SOCIETIES AND SHOWS.

THE following list has been prepared at the request of numerous correspondents, who have supplied us with the particulars here given, and it will, no doubt, be found useful by many who are concerned with exhibitions during November. The name of the society, date of show, with the Secretary's name and address are given in that order.

Banbury, 19th Nov. ; H. F. Bennett, 46, High Street, Banbury
 Bath, November 12th and 13th ; B. Pearson, 14, Neilson Street
 Batley and District, Nov. 22nd ; John T. Booth, Batley
 Bedford, Nov. 19th and 20th ; J. Sanders Clarke, 49, Linden Road
 Bedford and Bedfordshire Chrysanthemum Society, Nov. 19th and 20th ; Oliver C. Coombs, 28, Mill Street, Bedford
 Birmingham and Midland Counties, Nov. 12th and 13th ; J. Hughes, Northwood Villas, Metchley Lane, Harborne, Birmingham
 Bournemouth, Nov. 12th and 13th ; Charles Brown Carnarvon, Cavendish Road
 Bristol, Nov. 13th and 14th ; F. Wilford Jones, Hill Avenue, Totterdown, Bristol
 Cardiff and District, Nov. 18th and 19th ; C. R. Waldron, 96, St. Mary Street, Cardiff
 Chelmsford, Nov. 12th and 13th ; P. Edwards, 100 High Street
 Cheshunt, Nov. 14th and 15th ; R. Archer, Hatton Road
 Chorley, Nov. 21st and 22nd ; James Sargeant, 64, Market Street, Chorley
 Cornwall Royal Polytechnic, Nov. 12th, 13th and 14th ; John P. Cregoe, 7, Tehidy Terrace, Falmouth
 Cranbrook and Weald of Kent, Nov. 13th and 14th ; Albert Baker, The Hill, Cranbrook, Kent
 Crediton, Nov. 13th ; G. Lock, Belle Parade Cottage, Crediton
 Dawlish, Nov. 13th ; H. L. Friend, 3, Priory Terrace, Dawlish
 Derby, Nov. 14th and 15th ; G. Sutherland, Arboretum Square
 Devon and Exeter, November 7th ; G. D. Cann, 16, Queen Street, Exeter
 Diss (Norfolk), Nov. 18th ; Rev. F. Page Roberts, Scole Rectory
 Eccles, Patricroft, and Pendleton, Nov. 14th and 15th ; H. Huber, 183, Worsley Road, Winton, Patricroft
 Green Street and District, Nov. 19th and 20th ; W. G. Ray, Mount Pleasant Nursery, Green Street, near Sittingbourne
 Guildford, Nov. 12th and 13th ; Arthur Jupp, Greencroft, Stoke, Guildford
 Hampstead, Nov. 12th and 13th ; Robert Frisby, 47, Flask Walk, Hampstead, N.W.
 Hartlepool, Nov. 18th and 19th ; B. C. Laycock, 147, Studley Road, West Hartlepool
 Hitchin, Nov. 14th and 18th ; Pearson T. Harris
 Hull and East Riding, Nov. 19th and 20th ; Edward Harland and James Dixon, Manor Street, Hull and 2, County Buildings, Hull
 Kettering, November 14th and 15th ; H. T. Favell, 8, Mill Road, Kettering
 Kingston-on-Thames, Nov. 11th and 12th ; G. Woodgate, Warren House Gardens
 Leicester and Midland, Nov. 14th and 15th ; H. F. Anthony and E. E. Waite, Knighton Church Road, South Knighton, and 12, Diseworth Street, Melbourne Road, Leicester
 Liverpool, Nov. 18th and 19th ; E. Bridge, 3, Cedar Terrace, Tarbock Road, Huyton
 National Society.—Great Festival, Nov. 11th, 12th, 13th, and 14th ; R. Dean, Frampton Park Nurseries, Hackney
 Norfolk and Norwich, Nov. 20th and 21st ; John E. T. Pollard, 7, Lady's Lane, Norwich
 Northamptonshire, Nov. 12th and 13th ; E. Draper, 2, Primrose Hill, Northampton
 Ramsbottom, Nov. 15th ; H. H. Nutter, 14, Crow Lane, Ramsbottom, near Manchester
 Rugby, Nov. 19th and 20th ; William Bryant
 Scarborough, Dec. 2nd and 3rd ; Thomas Henry Pexton, 136, North Marine Road, Scarborough
 Scottish Horticultural, Nov. 20th, 21st, and 22nd ; R. B. Ferguson, 6, South St. Andrew Street, Edinburgh
 Southend-on-Sea, Nov. 13th and 14th ; John Brown, Recko House, Hamlet, Southend-on-Sea, Essex
 Street, Nov. 14th and 15th ; A. D. Porter, Street, Somerset
 Swansea, Nov. 19th and 20th ; Messrs. T. Kneath and W. Roberts
 Taunton, Nov. 13th ; Edgar Poynter, Castle Green, Taunton
 Teddington, Nov. 13th and 14th ; David Anderson, The Nursery
 Tiverton, Nov. 20th ; R. P. Cosway, Lime Cottage, Tiverton
 Tunbridge Wells, Mid-Kent, and East Sussex, Nov. 12th and 13th ; Ernest Charlton, 37, Ye Pantiles, Tunbridge Wells
 Twickenham, Nov. 18th and 19th ; J. J. G. Pugh, 2, Heath Road
 Wellington (Somerset), Nov. 14th ; Charles Tite, Shutes House, Wellington, Somerset
 Westerham, Nov. 19th and 20th ; Frank George Remnant, High Street
 Wimbledon and District, Nov. 13th and 14th ; Dr. Geo. Walker, 12, Lingfield Road, and W. W. Thomson, The Nurseries, Hill Road, Wimbledon

Winchester, Nov. 13th and 14th ; Chaloner Shenton, 74, High Street, Winchester

Yeovil, Nov. 19th ; E. H. Oakley, Eason Terrace, Yeovil
 York, Nov. 19th, 20th, and 21st ; J. Lazenby, 8, Spurriergate

THE CHRYSANTHEMUM IN TASMANIA.

[A Paper by Mrs. Marian Thrower, Representative of the Northern Horticultural Society of Tasmania, read at the National Chrysanthemum Society's Conference, Royal Aquarium, Westminster, November 11th, 1890.]

TASMANIA is so small a speck upon the surface of the globe, and is so remote from the British Islands, that it is perhaps not very surprising that a great many persons in England know nothing more about it than that such a place actually exists, and some have vague ideas that the inhabitants thereof are still aboriginals, with little or no civilisation. It is a matter for no little surprise when such individuals learn that Tasmanians keep pace as far as possible with all movements which interest their fellow subjects in England, and I can safely assert that in no part of the Australasian group is the culture of the Chrysanthemum carried on with so much zeal and success as it is in the colony, one of whose leading horticultural societies I have the honour to represent at this Centenary Festival.

Tasmania possesses a climate which appears to be especially favourable to the growth of the Chrysanthemum, being devoid of great extremes of heat and cold, and when the knowledge of its culture shall have been as completely mastered there as it has been by the growers in England, I do not think I am over-sanguine in predicting that it is there it will yet be seen to the greatest perfection. And as it can only be by experience extending over some years that this knowledge can be acquired, it will naturally be some time before our happiest results can be achieved.

You in England are celebrating the centenary of the Chrysanthemum, whilst we, as a colony, have not yet reached so venerable an age. It cannot, therefore, be expected that we have arrived very far beyond the initiatory stages of Chrysanthemum lore, but that we are progressing with rapid strides must be acknowledged by anyone who could compare notes between the position occupied by the flower in the year 1886 and that to which it has attained in 1890. It is only four years ago since the first actual Chrysanthemum exhibition was held in Northern Tasmania. It is true that for many years previously the flowers held a subordinate position in the schedule at the autumn flower shows, when very frequently no entries at all were made, for there was never any competition in this class among amateurs, and our professional gardeners held it so little in esteem that when at length the tide of popular favour set in so strongly that they could no longer ignore it, the result was that they found themselves quite or nearly as much in the dark as to the best method of culture to be adopted in our far off land as were the most inexperienced amateurs. Then recourse was had by both professionals and amateurs to the best English authorities upon Chrysanthemum culture, and although much light was thus obtained it may easily be understood that the rules which apply to the English seasons and climate are not applicable to those of Tasmania.

In the year 1886, as I have mentioned, our first Chrysanthemum show was held in Launceston, it having been rather hastily improvised by Mr. Ernest Whitfield, who must be regarded as the founder of our now flourishing autumn exhibitions ; this gentleman is now President and Honorary Secretary of the Society represented by me upon the present occasion. The flowers which were exhibited at this initial Show were not grown upon the principles since followed with exhibition plants, having been allowed to grow in the natural way ; but as most of those who contributed specimens upon that occasion were amateurs who, learning through the English horticultural press of the successful results which rewarded the efforts of growers of the Chrysanthemum "at home," as England is always known by us, had imported many fine varieties which had until then been quite unknown in Tasmania, it was seen that a wide and interesting field was open to those who would venture to explore it. The immediate consequence of our first Chrysanthemum show was an increased desire upon the part of amateurs to improve their collections and to learn something of the methods which would ensure successful culture ; at that time less than 100 varieties had found their way to Tasmania, now there is no colony in Australasia which grows so many. Quickly succeeding the establishment of Chrysanthemum shows in Launceston the kindred associations in all the northern provincial towns followed our lead, so that the "queen of autumn flowers" may now be said to have a very firm footing in our island. The affiliation of the Northern Horticultural Society of Tasmania with the National Chrysanthemum Society may be considered as marking a new era in its history, and that its future will be a prosperous and eventful one can scarcely be doubted.

The culture of the Chrysanthemum in Tasmania can scarcely be followed upon the lines which obtain in England. With us pot-grown plants find little favour, except as bush specimens or for decorative purposes ; the great interest of our exhibitions always centres around the cut specimens. For this purpose we have found that culture in the open ground gives the most satisfactory results. It may not be altogether uninteresting to learn how Tasmanian growers proceed when raising plants. Many strike the cuttings which are taken from the first young growth which arises from the stools of plants which are left in the ground after they have been cut down, and these, when the certainty of having propagated sufficiently is assured, are then removed and thrown away. Some growers strike their cuttings in small pots, keeping them in a cool, close frame for ten days or a fortnight, while

others again plant them straight into the open ground, where they remain until they bloom; but the latter method is not common, although I know it is adopted by one of our most extensive growers, who is a very successful exhibitor. As soon as the cuttings are quite established, at whatever season they are taken, they are generally transplanted to the ground, where they make very rapid growth—so rapid, indeed, that it is always necessary to make successional plantings to insure having certain varieties at exhibition time. The period for the general planting out is the month of October, which is early spring with us in Tasmania; but cuttings which are inserted even in November frequently furnish flowers for the show which takes place in April. When the plants have attained a height of about 10 inches it is usual to top them, and the three branches which are thus produced are, as soon as they are of sufficient height, tied to separate stakes, the axillary growths being removed as they appear. Each plant thus produces three large blooms, instead of one, as grown upon the single stem mode, and we have found that the blooms are quite as fine, while the more dwarf growth is better suited for garden culture. The plants do not appear to require nearly so long a period for ripening the wood as seems to be necessary in England, the latest plants being generally quite as mature as those which were put out earlier. The rapidity with which the Chrysanthemum grows in our climate in most instances precludes us from taking the crown bud, which develops too quickly to be of any use for exhibition purposes. The greater heat of our late summer has probably something to do with this; therefore it is the custom to select the terminal bud, which gives us far more satisfactory results. Much difficulty was experienced by those who at first adopted the single stem plan of growing, for so many of the varieties grew to so great a height as to render it almost impracticable to give them sufficient support, and to protect them from the high winds which often prevail in our autumn season; so that as it was evident that results quite as satisfactory were obtained from topping once in the early stage, that plan is most generally adopted.

As our climate is very much drier than that of England it goes without saying that a great deal of labour is necessary as soon as the summer sets in, so that the plants may suffer no check, and it is therefore indispensable to mulch all the ground upon which Chrysanthemums are grown very heavily with well-decayed manure before the spring rains have quite ceased; by this means a good stock of moisture is stored up to meet future needs. Then, when all disbudding is over and the season of bloom is approaching, all those who are growing for exhibition purposes set about giving the plants copious doses of liquid manure; but as each grower in our locality seems to have some pet liquid for this purpose it would be rather difficult to say which is most in demand. Some use chemical manures, others soot water, stable manure liquid, bone dust, or guano liquid.

We have many enemies to contend against during the whole period of the growth of our favourite flower. To begin with, the mildness of our climate permits such midnight marauders as slugs to play deadly havoc among the tender foliage of newly rooted cuttings, necessitating much watchfulness. Scarcely have these foes left the field than many growers who have plants and cuttings which have been imported from England find that they have imported with them a black fly, which haunts the newly unfolded leaves, and is very difficult to dislodge. Later we have unwelcome visitors in the form of small green worms and caterpillars, which do much harm to the bud shoots; then, when all appears to be smooth sailing, mildew makes its appearance, and sometimes a small green fly follows this; but what is more objectionable than any of these is the sudden damping of the blooms just when success seems most certain. With regard to the latter trouble, however, I have seldom seen it affect the Japanese varieties, and only certain of the incurved, those which generally suffer most being the Empress of India, the Queen family, Alfred Salter, and some others—for, strange to say, many varieties which grow in the same bed, within a few feet of those named, do not suffer at all.

The drawback to the system we pursue of growing exhibition blooms entirely out of doors, is the liability to which they are exposed of being injured by early frosts which occasionally visit us in the autumn, so that it is sometimes necessary to have a kind of elevated frame over which light canvas may be drawn to avert injury to the flowers. In addition to all the best known and esteemed varieties of incurved and Japanese, good collections of reflexed, Anemone flowered, Pompons, and fimbriated varieties may be seen at our exhibitions, but there is no question that Japanese varieties are preferred by the majority of our growers, probably on account of the greater difficulty which exists in producing perfect types of the incurved varieties, as well as the greater adaptability of the former for all decorative purposes. Our exhibitors have yet much to learn from the old country in the matter of staging, arrangement of colours, and other matters which have to be considered, as well as the production of flowers which are fit for exhibition. Exhibitors, too, are not always satisfied with the decision of the judges, who are sometimes not as experienced as could be wished, but this is a difficulty which time will remove, as men of home experience find their way to our shores and introduce some of their ideas among us.

The competition among both professional and amateur Chrysanthemum growers is very keen, and the contests are always very close ones, many of the exhibitors travelling as far as from Hobart to Launceston, and *vice versa*, a distance of 130 miles by train, with their exhibits. Tasmania is destined to occupy a premier position among the Australias with regard to Chrysanthemum culture, owing to the great superiority of its climate, the scorching hot winds of the summer upon the main-

land having a most deleterious effect upon the plants, while the water supply of the colonies adjoining Tasmania is not at that period adequate to the demands made upon it. I feel that it is a matter for congratulation that our Society is privileged to be represented among the affiliated societies of the National Chrysanthemum Society upon this most auspicious occasion, although I consider it is to be regretted that a member no better qualified than myself to speak upon Chrysanthemum culture should have undertaken the task, but I trust that my endeavours to throw some little light upon matters as they exist at the Antipodes will be received in a spirit of indulgence and toleration of my shortcomings.

I cannot conclude without expressing a deep regret, not only on behalf of the Northern Horticultural Society of Tasmania, but also upon my own, at the untimely decease of the late Honorary Secretary of the



FIG. 57.—MRS. MARIAN THROWER.

National Chrysanthemum Society, Mr. William Holmes, whom I had the pleasure of meeting, and to whom I am indebted for many acts of kindness and courtesy.

ROBERTS' IDEAL VINERY.

I READ with much pleasure in your issue of September 18th the interesting reprint of a paper read by Mr. T. Roberts at the meeting of the British Fruit Growers' Association at Brighton, on September 11th, and I have been hoping that some amateur other than myself, thirsting for knowledge, would have made further inquiries through the medium of your columns as to the full structural details of these vineries that Mr. Roberts so strongly recommends, and in which it appears he has been so successful, whereby we amateurs could profitably undertake the cultivation of the Grape at popular prices.

I have just erected a Tomato house under the superintendence of a friend, from mutually devised plans, 100 feet long, 32 feet wide, in two arcades, not spans, if you please (what a much brighter picture arcade presents to the mind's eye than span), heated with 1000 feet of glazed earthenware piping. I am no believer in houses cheaply run up, without regard to permanence, constantly wanting repair, and in a very few years becoming quite tumbledown. Grape growing could not be properly or successfully carried on in such houses as these I am sure on Mr. Roberts' system. Would he kindly say whether his houses are iron or wood, and also give any other useful information to assist me in erecting a similar structure to his own, but of more modest dimensions? The one I propose would be 100 feet long, 25 feet wide, 10 feet high at the sides; also would he deem two flows and a return up each side sufficient for heating purposes, or would he suggest in addition a flow and return on each side of the pathway?—T. W. S.

CHRYSANTHEMUM SHOWS.

FINCHLEY.—NOVEMBER 4TH AND 5TH.

THAT two societies working for the same object in such close proximity as Finchley and Highgate could both make grand exhibitions on the same day shows that there must be a large number of cultivators in the immediate neighbourhoods. The Woodside Hall, in which the fifth annual Exhibition was held, was not large enough to contain the various exhibits. Cut blooms were excellent throughout all the classes, the chief honour being awarded to Mr. Grey, gardener to W. B. Brand, Esq., Finchley, for thirty-six blooms, eighteen Japanese and eighteen incurved, for which a large silver challenge cup was offered; there were four competitors, and the first prize collection comprised fine blooms. Japanese: Avalanche, Baronne de Prailly, Gloriosum, Etoile du Lyon, Mons. H. Elliott, Mrs. Cannell, Edwin Molyneux, Ralph Brocklebank, Sunflower, Madame C. Audiguier, Maiden's Blush, Madame

Baco, Elaine, Madame J. Laing. Incurved: Queen of England, Lord Wolseley, Golden Empress of India, Alfred Salter, Lord Alcester, Violet Tomlin, Prince Alfred, Mrs. Heale, Mr. Brunlees, Jeanne d'Arc, Refulgence, Princess Beatrice, White Venus, Mr. G. Glenny, Beverley, Mr. Bunn, Mrs. G. Rundle, and Nil Desperandum. The other collections ran very close, Mr. W. Beval, gardener to J. H. Smith, Esq., Mill Hill, took second honours, and Mr. James Rutson, gardener to A. W. Newman, Esq., the third. Mr. Rutson was a very good first with twenty-four blooms distinct, twelve Japanese and twelve incurved. His Japanese comprised massive blooms of Condor, Sarah Owen, Avalanche, Edwin Molyneux, Sunflower, Meg Merrilies, Val d'Andorre, Ralph Brocklebank, Madame J. Laing, Mrs. C. Wheeler and Criterion, and among his incurved Lord Alcester, Empress of India, Jardin des Plantes, Empress Eugénie, Lady Dorothy, Princess Teck, Barbara, and Princess Beatrice were fine. The Centenary medal of the National Chrysanthemum Society was awarded to Mr. Grey for the largest bloom of Japanese, with Etoile de Lyon, a very highly coloured flower and of great substance. Several stands of Lady Margaret were staged, and the awards were made to H. Raven, gardener to G. J. Morris, Esq.; W. King, gardener to J. Leeds, Esq., and W. Burch, gardener to J. Smith, Esq., in the order of their names. For six blooms of Elaine the competition was keen, Messrs. Grey, Salter and Raven were placed first, second, and third respectively. In another class for three pairs of cut blooms there were ten collections staged, Mr. Grey being awarded first with Lord Wolseley, Jeanne d'Arc and Refulgence. The second award went to Mr. Burch for Golden Empress, Empress of India, and Princess of Wales, and the third to Mr. H. A. Page with Golden Empress, Violet Tomlin and Princess Teck.

The competition was close in the class for incurved, there being six exhibitors. Mr. H. A. Page, gardener to F. Crisp, Esq., New Southgate, had a magnificent board of Alfred Salter, Queen of England, Empress of India, Golden Empress, Miss Haggas, Nil Desperandum, Jardin des Plantes, Violet Tomlin, Mr. Brunlees, Princess of Wales, Baron Beust, and Princess Teck. Messrs. Grey and Walker shared the other two honours. Twelve Japanese were represented by ten competitors, Mr. Page again heading with a grand collection of Etoile de Lyon, Ralph Brocklebank, Stanstead Surprise, Snowstorm, Alba Fimbriata, Madame C. Audiguier, Condor, splendid; Madame Laing, Mrs. Beale, Belle Paule, and Soleil Levant. Mr. Grey ran close for second place, and Mr. Burch third.

Pompons, Anemone Pompons, reflexed, and Japanese Anemones were well represented, and a large number of small classes for both incurved and Japanese, which we cannot this week separately record. The groups were also good, though not numerous, Messrs. Page, Hayler, and Carter dividing the honours in the order of their names. Fruit and vegetables were also well exhibited.

EALING.—NOVEMBER 5TH.

THE thirteenth annual Exhibition took place in the Victoria Hall, on 5th inst., and was quite a representative display of autumn produce. The Hon. Secretaries, Messrs. Cannon and Dawes, are to be commended for their excellent arrangements. We think that the action of the executive in commencing this season to restrict the competition to Ealing will not be conducive to cultural success (one of the chief aims of such shows) in the future. For instance, at the Show under notice we missed the fine flowers sent in previous years from Chiswick and other districts.

Chrysanthemums, both plants and cut flowers, were shown in admirable condition. In the group class first honours were accorded to a capital and effective arrangement, containing some really fine flowers contributed by Mr. C. Long, gardener to E. Oakshott, Esq., Orchardene. Second, Mr. W. White, gardener to J. Curryer, Esq., Ealing Dean; third, Mr. J. Granger, gardener to Mrs. Scott-Turner; fourth, Mr. Collyer, gardener to Mrs. Murrell, Uxbridge Road. It would be an advantage (to the public and others) another season were the Committee to require that the plants comprising such groups be named. The National Chrysanthemum Society offered the special Centenary medal as an additional first prize for twelve incurved blooms; this double event was won with some fine flowers by Mr. C. Edwards, gardener to W. Owen, Esq., The Elms, Castle Bar Hill, excellent were Alfred Salter, Miss Haggas, and Refulgence. Second, Mr. C. Long. Third, Mr. H. Collyer. Twelve Japanese, first, Mr. C. Long, whose best flowers were Stanstead White, Sunflower, E. Molyneux, Ralph Brocklebank, and Avalanche. Second, Mr. C. Edwards. Third, Mr. H. Vyner, gardener to R. D. Dawes, Esq., Edmondscote House.

Twelve bunches Pompons.—First, Mr. H. Collyer, who showed Rose d'Amour, Charles Dickens, and Black Douglas, well. Second, Mr. C. Edwards. Third, Mr. A. Jones, gardener to E. Hyde, Esq., Hill Crest, Castle Bar.

For nine incurved blooms the National Chrysanthemum Society's silver medal was won by Mr. H. Vyner, gardener to R. D. Dawes, Esq., particularly noticeable being Lord Wolseley, Lord Alcester, Refulgence, Golden Queen of England, Mrs. W. Shipman, Violet Tomlin, Miss Haggas, and others. A pretty class was that for six bunches of Anemone flowered. Here Mr. E. Chadwick, gardener to E. M. Nelson, Esq., Hanger Hill House, secured first prize, his best flowers being Antonius and Contrast. The same exhibitor secured the premier prizes for a stand of Chrysanthemums and for a bouquet of Chrysanthemums, both highly artistic arrangements. The premier incurved bloom Queen of England was shown by Mr. C. Edwards, gardener to W. Owen, Esq. Premier Japanese, Stanstead White, by Mr. C. Long.

Some very tastefully arranged bouquets of Chrysanthemums, not for competition, were sent by Mrs. A. B. Smith, florist, &c., Ealing (highly commended). Miss Hudson, Gunnersbury House, arranged charming stands of Chrysanthemums (highly commended). A grand bank of foliage and flowering plants, not for competition, was staged by Mr. Reynolds, Gunnersbury Park Gardens; the Bouvardias were extremely well flowered (highly commended). Collection of vegetables, six kinds, distinct.—First, Mr. C. Edwards, gardener to W. Owen, Esq., a very meritorious lot, closely followed by Mr. E. Chadwick, gardener to E. M. Nelson, Esq. Third, Mr. C. Long, gardener to E. Oakshott, Esq. Grapes, three bunches.—First, Mr. Davis, gardener to E. Tautz, Esq., Castle Bar Hill, very good examples of Gros Colman. Second, Mr. S. Wigmore, gardener to F. Hicks, Esq., Oakhurst. Third, Mr. E. Chadwick. Apples and Pears were shown very successfully by Mr. E. Chadwick, Mr. J. Granger, gardener to Mrs. Scott-Turner, and Mr. C. Long. Good non-competitive collections of Apples were sent by Mr. G. Reynolds, Gunnersbury Park, and Mr. E. Chadwick. Hanger Hill House, the latter exhibitor taking first prize in the class for four dishes of Potatoes in a remarkably keen competition, the varieties consisting of Reading Russet, Schoolmaster, Beauty of Hebron, and Duke of Albany. The cottagers made a very good display of vegetables, some of the samples comparing very favourably with the produce from the professional growers.

TOOTING.—NOVEMBER 5TH.

THE baths at Balham constitute when duly prepared, as on this occasion, an admirable place for a Chrysanthemum show, ample space being provided both for exhibits and visitors. A bright and effective Show was opened there on Wednesday last week by the Tooting Society, which is evidently making good progress in the neighbourhood, and performing a useful service. The Committee and the hardworking Secretary, Mr. Brown, may be congratulated upon the advance accomplished, and it is to be hoped that they will continue their good work in the same spirit.

The exhibits cannot be noted in detail; only the leading features can be indicated, and turning first to the cut blooms, the finest contribution was that which gained Mr. Fullick the premier award for twenty-four blooms, twelve incurved and the same number of Japanese. His blooms were not large, but fairly neat and fresh, the varieties being as follows. Japanese: Avalanche, E. Molyneux, Elaine, Comte de Germiny, Jeanne Délaux, Paul Dutour, Charlie Sharman, Maiden's Blush, M. Desbrieux, Madame C. Audiguier, Hamlet, and Gloriosum. The incurved were Queen of England, Prince of Wales, Mrs. G. Rundle, very fine; Alfred Salter, Jeanne d'Arc, Baron Beust, Empress of India, John Salter, Mr. Bunn, Lord Wolseley, Golden Empress, and Princess Beatrice. The second place was taken by Mr. T. Parrott, gardener to H. Russell, Esq.; and the third by Mr. F. Ball, gardener to Sir H. Doulton.

Mr. Parrott had the best twelve Japanese, fresh fine blooms of Etoile de Lyon, Ralph Brocklebank, Stanstead White, E. Molyneux, Avalanche, Madame C. Audiguier, Gloriosum, Fernand Feral, Soleil Levant, Stanstead Surprise, Japonais, and Elaine. The same exhibitor was first for six Japanese, the varieties being Etoile de Lyon, Val d'Andorre, Madame C. Audiguier, Edwin Molyneux, Avalanche, and Japonais; for these the National Society's Centenary medal was awarded as the best Japanese blooms in the show. The principal exhibitors of plants were Messrs. Fullick and Weskar, the former showing standards, the latter dwarf plants. Both were good, and Mr. Weskar's three plants of the Rundle family were excellent, but a plant of Bronze Queen quite out of character lost him the premier award. Grapes, fruit, and vegetables were also well shown.

TORQUAY.—NOVEMBER 5TH AND 6TH.

A CAPITAL autumn Exhibition was provided in the Bath Saloons, a most suitable place, the competition being exceedingly keen. The groups of Chrysanthemums and miscellaneous plants were arranged in circles on the floor of the large hall with plenty of promenading space between. So numerous were the exhibits in the cut bloom classes that a special room had to be set apart for them. The greatest interest was centered in the class for thirty-six blooms distinct, half incurved and the remainder Japanese, for which a silver cup was given. Mr. W. Dolling, gardener to Mrs. Wild, Newton Abbott, was first with large, solid, and fresh incurved, and bright Japanese. The varieties were—Incurved, back row: Alfred Salter, Golden Empress (to which was awarded the prize for the premier incurved bloom of the Show), Queen of England, Empress of India, Lord Wolseley, Lord Alcester. Middle row: Mrs. W. Shipman, Princess of Wales, Miss M. A. Haggas, Prince Alfred, Jeanne l'Arc, Violet Tomlin, extra. Front row: Refulgence, Barbara, Lady Hardinge, Mrs. Heale, Baron Beust, Mrs. N. Davis. Japanese, back row: Comte de Germiny, Mrs. Beale, Sunflower, Etoile de Lyon, Edwin Molyneux, Avalanche. Middle row: Belle Paule, Mons. Bernard, Mr. Cannell, Sarah Owen, Album Fimbriatum, Madame C. Audiguier. Front row: Grandiflorum, Meg Merrilies, Madame J. Laing, Jeanne Delaux, Stanstead Surprise, and Mr. Ralph Brocklebank. Second, Mr. G. Foster, gardener to H. Hammond Spencer, Esq., Teignmouth, who had larger incurved, but much weaker Japanese; third, Mr. A. Searle, gardener to J. N. Whitehead, Esq., Gnaton, Torquay.

For twelve incurved blooms, distinct, Mr. Foster was first, having large and well-finished flowers; Mr. J. Stiles, gardener to Miss Fripp, Teignmouth, second; Mr. W. B. Small, Torre Park Nursery, third. In the class for twelve Japanese, distinct, Mr. Dolling with a superior collection of popular kinds was well to the front, Messrs. Stiles and

Searle following closely as second and third in the order named. Mr. Dolling followed up his previous successes by securing the premier award for six distinct reflexed blooms, Cloth of Gold King of Crimson, Golden Christine, Cullingfordi, and Felicity. Mr. Searle was a close second. Mr. Stiles occupied the leading place for six large Anemone-flowered with substantial blooms of Miss Annie Lowe, Lady Margaret, and Gluck. Mr. Searle and Mr. G. Foster were second and third respectively. For six Japanese Anemone blooms Mr. W. Satterly, gardener to A. Matthew, Esq., Braddon Villa, Torquay, easily won the first place; second, Mr. Searle. For six blooms, any one variety of reflexed, Messrs. Dolling and Searle were first and second, both staging Cullingfordi. Mr. Foster with Empress of India, and Mr. Stiles with Golden Empress, took first and second for six blooms of any one variety of incurved. For the same number of any white variety of Japanese Mr. Dolling won with superb Avalanche; Mr. Searle second, showing the same sort. Very good specimens of Boule d'Or secured for Mr. Foster the first prize. For six of any one yellow variety, Mr. Searle, following with Mr. Ralph Brocklebank. Mr. G. Cox, gardener to W. Fitzherbert, Esq., was first for the same number of any other colour in the Japanese section with grand Etoile de Lyon, one of which was selected as the premier Japanese bloom.

For a group of not less than eighteen varieties of Chrysanthemums in pots, arranged for effect in a circle of 8 feet diameter, Mr. Searle was placed first with dwarf healthy well grown plants, carrying good flowers. Mr. F. Ferris, gardener to J. W. Kimber, Esq., Cockington, second. For the best miscellaneous group Mr. W. Satterly was first with a bright arrangement, and Mr. F. Ferris second. Mr. C. H. Alder, gardener to W. B. Fortescue, Esq., Octon, with a well grown plant of Val d'Andorre, secured first place for the best specimen Japanese. Mr. G. Lea, gardener to W. Lavers, Esq., Upton Leigh, won the chief prize for Orchids, and Messrs. Peter Veitch & Co. with other local firms contributed to the diversity of the Exhibition.

HIGHGATE, FINCHLEY, AND HORNSEY.—NOV. 5TH AND 6TH.

THE Exhibition held by this Society on Wednesday and Thursday last week afforded abundant proof that there is no decline in the activity of Chrysanthemum growing in the above neighbourhood, for a more satisfactory display could not well have been desired. The arrangement was well carried out by Mr. Theobald. The Northfield Hall, a spacious lofty building, in which the more important classes were staged, was filled to overflowing, and a spacious marquee was also literally crammed. The long list of special prizes numbering thirty offered by residents, and thirty-two classes in the schedule proper, will show at a glance the great interest and attention shown, to the satisfaction of all concerned.

Groups and trained specimen plants were magnificent. Mr. J. Brittain, gardener to F. Reckitt, Esq., Highgate, received the highest award for a group in a space of 60 square feet, the prizes being offered by the President to the Society, and the silver medal of the National Chrysanthemum Society. In this collection all classes of the Chrysanthemum were represented, the foliage being excellent and the front plants very dwarf. The second prize was awarded to Mr. Vince, the London Cemetery Company. For six Pompons Mr. H. Eason, gardener to B. Noaks, Esq., secured first honours with evenly balanced and well flowered plants, Marie Stuart, Eynsford Gem, and Sœur Melanie being noteworthy. For a single specimen plant of W. Robinson fully 5 feet in diameter, and carrying several hundred good blooms, Mr. J. Brook, gardener to W. Reynolds, Esq., The Grove, was deservedly awarded the first prize. The same exhibitor was again to the front with six trained Japanese, perfect specimens of cultural skill, and comprised Miss Gorton, Madame Baco, Margot, Bertie Rendatler, Avalanche, and Chinaman. Mr. G. Sanders, gardener to Mrs. Dawson, occupied the second place, and Mr. Eason the third, all exhibiting well.

Cut Blooms.—A silver challenge vase, value £10 10s., but which from its appearance we should have thought was of greater value, was offered by the President, Vice-Presidents, and patrons, for twenty-four cut blooms, distinct, twelve incurved and twelve Japanese. Mr. J. Brittain won this coveted trophy with the following:—Incurved: Lord Alcester, Lord Wolseley, Emily Dale, Queen of England, Alfred Salter, Golden Empress, Empress of India, Violet Tomlin, good; Princess of Wales, a grand built flower; Lady Harding, Mrs. Shipman, Miss Haggas. Japanese: George Daniels, E. Molyneux, Condor, Sunflower, fine; Marguerite Marrouch, Gloriosum, Stanstead Surprise, Carew Underwood, good; Criterion, W. Holmes, Etoile de Lyon, grand; and Avalanche—a very even and solid collection. Mr. W. Hodges, gardener to Mrs. Crossely, Cholmondeley Park, second, with a fine Japanese stand, and conspicuous blooms of Empress of India, John Salter, Princess of Wales, and Miss Haggas. Mr. Bushby, gardener to D. C. Thomas, Esq., was placed third for a good collection. In the class for twelve Japanese Mr. Hodges was first with good blooms of Edwin Molyneux, Avalanche, Mons. Bernard, Etoile de Lyon, Madame C. Audiguier, Val d'Andorre, Sunflower, a well built flower of Mr. C. Wheeler, Criterion, Mdle. Lacroix, J. Delaux, and Madame Laing. Mr. G. Quelch, gardener to W. W. Howard, Esq., Sheppard's Hill, was a very good second, Alba fimbriata in his stand was lovely, and Mr. E. Rowbottom, gardener to H. R. Williams, Esq. (the President), third, among others Etoile de Lyon, Stanstead White, Condor, and Belle Paule were highly finished blooms.

For twenty-four Japanese Mr. E. Rowbottom secured premier honours with beautiful examples of Etoile de Lyon, Val d'Andorre, Boule d'Or, Edwin Molyneux, Stanstead White, Comte de Germiny,

Hamlet, Condor, Golden Thread, Avalanche, Belle Paule, G. Daniels, Madame C. Audiguier, Volunteer, Sunflower, Charlie Charman, Mons. Tarin W. Holmes, Mdle. Lacroix, Edward Audiguier, Maiden's Blush, and a new variety named Feu Melusche. Mr. J. Brooks received second honours. No third prize offered.

For thirty-six, eighteen Japanese and eighteen incurved, Mr. T. Caryer, gardener to A. G. Meissner, Esq., Weybridge, was placed first for the following—Miss Haggas, Violet Tomlin, Lord Alcester, John Salter, Princess of Wales, Mrs. Heale, Prince Alfred, Jeanne d'Arc, Lady Hardinge, Mrs. Coleman, Jardin des Plantes, Lord Wolseley, Mrs. Shipman, Barbara, Perle Precieux, Princess Beatrice, Nil Desperandum, Mrs. Dixon, Edwin Molyneux, Mrs. J. Wright, Marsa, Soleil Levant, Val d'Andorre, Florence Percy, Madame C. Audiguier, Sunflower, Louise Leroy, Madame Laing, Stanstead White, Madame Baco, Criterion, Belle Paule, Mr. C. Orchard, J. Delaux, J. R. Pearson, and L'Or du Japon. Mr. R. Aitken, gardener to M. Goodall, Esq., Highgate Road, was placed second for a good collection.

Several good boards of six, one variety, were staged; the best came from Mr. W. R. Hodges with Empress of India, Messrs. Brittain and Bushby being second and third respectively with Queen of England and Empress of India. Mrs. B. D. Crane offered prizes for six blooms any of the Queen family, which made an interesting class, Messrs. Brittain, Bushby, and Clement being placed in the order of their names. For twelve incurved in the members' class the relative positions of first, second, and third awards was made to Messrs. Brittain, Brooks, and Hodges for collections very fresh and clean. Six Japanese one variety was well contested, and Messrs. Rowbottom, Bushby, and Brooks were placed in order of their names, all exhibiting Avalanche in fine condition. Pompons were extremely well shown, a long stage being occupied with selections of disbudded sorts. A silver challenge cup, value £5, was offered, open to amateurs only, for eighteen cut blooms, distinct, nine incurved and nine Japanese. Mr. D. B. Crane was deservedly awarded this trophy for a neat and beautiful collection, consisting of Jeanne Delaux, Sunflower, La Triomphante, Madame Audiguier, Mons. Bernard, Avalanche, Stanstead White, Edwin Molyneux, and Val d'Andorre, Prince Alfred, Empress of India, Violet Tomlin, Mrs. Dixon, Lady Hardinge, and H. Shoesmith. Mr. J. Sears was placed second, and Mr. E. Linfield third. For twelve Japanese and twelve incurved in separate classes (amateurs) Mr. Crane secured both first prizes, Messrs. Sears, Shorten, and Rundle sharing the other awards.

Anemones and reflexed were well shown, Messrs. Neary, Quelch, Aitken, and Bushby being the principal successful exhibitors. Bouquets, buttonholes, and cpergnes were numerous exhibited, and many tasteful arrangements received their share of admiration. The National Chrysanthemum Society's bronze medal we observed was awarded to Mr. D. Crane for a fine stand of Avalanche against six competitors. Space will not allow us to particularise further notable features of this well-managed Exhibition.

RYDE, ISLE OF WIGHT.—NOVEMBER 5TH AND 6TH.

THE Exhibition held on the above dates proved a very great success. The plants were better than usual, and the cut blooms from the amateurs showed immense progress. The gardeners' classes also showed great improvement. The Chairman, J. O. Brook, Esq., C.C., and the Secretary, Mr. Jas. Eley, are to be congratulated on the excellent display and the increased interest taken in the Society. The first prize group came from Mr. Tamplin, florist, whose plants were dwarfer than the second from Mr. Attrill, gardener to Mrs. Ratcliff, although the latter had some very fine flowers. The third prize went to Mr. F. Sutton. The first prize for six plants went to Mr. G. Wilkins, gardener to W. S. Ridley, Esq., The Castle, St. Helens, for fine bushes bearing good blooms; Mr. A. Tolby, gardener to S. E. Ridley, Esq., St. Helens, was second. For three plants of incurved varieties Mr. Wilkins was again first, and for three plants of Japanese Mr. A. Tolby was first with some good plants; Mr. Quinton, gardener to W. Woods, Esq., second; Mr. Wilkins third.

Cut Blooms.—The chief prize in the open class was offered for thirty-six cut blooms, eighteen incurved and eighteen Japanese, distinct. This was secured by Mr. J. Agate, Havant, with some very fine blooms, Mr. Wilkins being a very good second, Mr. J. Woods third. Mr. Winter, gardener to Mrs. Harvey, Shanklin, was first for Anemones, Mr. Agate second, Mr. J. O. Brook third. The prize for six of any one incurved brought out some of the best blooms in the Show, Mr. Wilkins being first with Lord Alcester, Mr. Agate second, Mr. J. O. Brook third. First prize in the corresponding class for Japanese was won by Mr. Winter; second, Mr. Gatrell; third, Mr. Taplin.

The large class limited to the Island consisted of forty-eight cut blooms, twenty-four incurved and twenty-four Japanese. Mr. Wilkins was again first, Mr. Harrington second, Mr. Winter third. For twenty-four varieties, twelve incurved and twelve Japanese, Mr. Winter was first and Mr. Wilkins second. For twelve incurved, distinct, Mr. Wilkins was first, Mr. Winter second, Lady Harper Crewe third. For twelve Japanese, Mr. R. Solly, gardener to Lady Oglander, Nunwell, was a good first, with fine blooms; Mr. Wilkins second, Lady Crewe third. The chief prizes for Anemones and reflexed were won by Mr. Winter, Mr. J. Woods, Mr. J. O. Brook, and Mr. Taplin. For six white Japanese Mr. R. Solly was first, Avalanche being good; Mr. J. Woods second, Mr. Winter third.

The class for forty-five blooms, set up in triplets, decorated with Fern or other foliage, brought six collections, and made a good display. Mr. J. O. Brooks was first, Mr. Taplin second, Mr. A. Tolly third, Mr. Winter

fourth. The flowers shown by the amateurs deserve especial mention. The blooms from Mr. Wheeler, Brading, Mr. F. Cooper, Brading, Mr. Matthews, Ryde, and Mr. W. Simmonds, Brading, who took the principal prizes, in some cases eclipsed the gardeners. The floral designs, baskets of Chrysanthemum blooms, and the splendid baskets of autumn foliage and berries, made quite an exhibition in themselves. Fruit was limited but good, a dish of Pitmaston Duchess Pears from the ex-Mayor of Ryde, Mr. R. Colenutt, being extraordinary, one fruit alone weighing 1 lb. 10 ozs., the whole weighing 16½ lbs., being quite a feature in a very pretty and interesting Exhibition.—C. O.

PORTSMOUTH.—NOVEMBER 5TH, 6TH, AND 7TH.

THE Portsmouth Chrysanthemum Society has earned the reputation of producing one of the best autumn Exhibitions in the kingdom. Perhaps in the present instance it was the most remarkable Show yet held, no less than 2340 blooms being staged in competition. Trained plants and groups, a feature at this Show, also vegetables and hardy fruit, were admirably represented. One feature adopted by the Committee of this Society is specially to be noted, the low charge of admission, which makes the Society immensely popular, and the arrangements always reflect the utmost credit upon the esteemed Honorary Secretary, Mr. F. Power, and his assistant. The staging was effectually carried out by Mr. J. Collins.

Taking the exhibits in the order of the schedule, we first note the plants, prizes for eight specimens being £10, £6, £4, and £2. Mr. J. Busby, gardener to Capt. Long, Blendworth Lodge, Horndean, was an easy first with neatly trained plants, fully 3 feet in diameter, freely flowered and very fresh. The most noticeable varieties were Chevalier Domage, Hiver Fleuri, Margot, Madame B. Rendatler, Dr. Sharpe, and Mrs. Dixon. Second, Mr. C. Penford, gardener to Sir F. Fitz-Wygram, M.P., Leigh Park, Havant, Mrs. Horrie, a reflexed sport from George Glenny, and Elsie being the most noticeable. Third, Mr. G. Lambert, Gordon Terrace, Chichester. For eight specimen Pompons, distinct, Mr. P. Hawkins, gardener to Mr. E. Laphorne, Fairthorne, Gosport, was an easy first with plants about 4 feet high, as much through, loosely trained and profusely bloomed. Mr. J. Lambert second; Mr. Hatch, gardener to the Victoria Park Committee, Portsmouth, third. For the best group of Chrysanthemums arranged in a space of 50 square feet, Mr. Gate, gardener to G. Cook, Esq., Langton House, Gosport, led the way with a very well arranged collection, consisting of incurved and Japanese varieties of good quality; Mr. Hatch was a good second; third, no name. Mr. J. Burridge, North End Nursery, Portsmouth, secured leading honours for a group of Chrysanthemums interspersed with foliage plants. Table plants were an especial feature, twelve, in not less than eight varieties, being required, and for which the sum of £2 was offered as first prize. Much the best came from Mr. A. Abrahams, gardener to T. H. Wilson, Esq., Hazelholt, Bishop's Waltham, being light and graceful. Mr. E. Wills, gardener to Mrs. Pearce, The Firs, Bassett, Southampton, second; Mr. J. Agate, nurseryman, Havant, third.

Cut Blooms.—The classes for these were the best filled in the Show. The principal class was that for forty-eight blooms, half to be incurved and the remainder Japanese, not less than eighteen varieties. As was stated last week, Messrs. W. & G. Drover secured the chief position with blooms remarkable for the high quality of both incurved and Japanese varieties. The names were:—Japanese, back row: Pelican, Mr. Falconer Jameson (two), Mons. Bernard, Sunflower (two), Etoile de Lyon, Avalanche. Middle row: Gloriosum, Mrs. C. Wheeler (very fine, two), Mrs. A. Hardy (superb), Edwin Molyneux, Comte de Germiny, Mons. Bernard, Stanstead White. Front row: Stanstead White, Ralph Brocklebank, Madame Baco, Condor, Gloriosum, Baronne de Prailly, Meg Merrilies, and J. Délaux. Incurved, back row: Golden Empress (two), Empress of India (to this was awarded the prize for the premier incurved bloom of the Show), Lord Alcester, Golden Queen of England (two), Empress of India, Queen of England. Middle row: Lord Alcester, Mrs. Coleman, Lord Wolseley, Jeanne d'Arc, Alfred Salter, Alfred Lyne, Miss M. A. Haggas, Princess of Wales. Front row: Novelty, Violet Tomlin, Jeanne d'Arc, Lady Hardinge, Violet Tomlin, Mrs. Shipman, Prince Alfred, and Nil Desperandum. Mr. N. Molyneux, gardener to J. C. Garnier, Esq., Rooksbury Park, Wickham, Fareham, was a good second, losing only by the greater weight of the first prize blooms. The incurved in this exhibit were models of neatness. The principal varieties were Mr. D. Mudie, Empress of India, Lord Alcester, Mrs. S. Coleman, and Miss M. A. Haggas. Japanese: Etoile de Lyon, Puritan, E. Molyneux, and Boule d'Or. Mr. C. Penford third. Mr. A. Payne, gardener to Mr. Ernald Smith, The Oaks, Emsworth, fourth.

In the class for twelve incurved and twelve Japanese, all to be distinct, there were five competitors, making a good display. Mr. N. Molyneux easily outdistanced his opponents with perfectly formed blooms of the former section, and fresh ones of Japanese, all well staged. The varieties were:—Incurved: Lord Alcester, Golden Queen of England, Queen of England, Empress of India, Miss M. A. Haggas, Alfred Salter, Golden Empress, Bronze Queen, Lord Wolseley, Princess of Wales, Violet Tomlin, and Princess Teck. Japanese: Etoile de Lyon, Avalanche, Boule d'Or, E. Molyneux, Stanstead White, Madame J. Laing, Puritan, Madame C. Audiguier, Madame Baco, Sunflower, Sarah Owen, and M. J. M. Pigny. Mr. G. Inglefield, gardener to Sir J. Kelk, Bart., Tedworth, Marlborough, was second, the Japanese being very fine, but the incurved lacked both size and finish. Third, Mr. Russell, gardener to Dr. Lewis, Henfield, Sussex. For twelve Japanese, distinct, Mr. Inglefield secured leading position with large, fully deve-

loped blooms of Madame C. Audiguier, Sunflower, Etoile de Lyon, Stanstead White, M. J. M. Pigny, Baronne de Prailly, extra fine; Carew Underwood, Stanstead Surprise, E. Molyneux, Avalanche, Boule d'Or, and Volunteer. Mr. A. Payne, second; Mr. H. Osman, gardener to Mrs. Strong, Harefield, Romsey, third. For twelve incurved, Mr. Inglefield and Mr. Penford was first and second respectively. Mr. Russell took leading honours in the class for reflexed, twelve blooms in not less than eight varieties, with medium-sized flowers of popular kinds. Second, Mr. Woodfine, gardener to E. P. Boyd, Esq., Emsworth; third, Mr. Penford. The last-named took premier position for twelve show Anemones, not less than six varieties, Gluck, Lady Margaret, Nelson, and Miss Annie Lowe being the best; Mr. Payne second, and Mr. Russell third. Mr. Penford also took first honour for Japanese Anemones, twelve blooms, not less than six varieties, Jeanne Marty, Dame Blanche, and Minnie Chate being the best. Pompons were a strong class, ten staging twelve bunches in not less than eight varieties, not more than three bunches of one variety. Mr. J. Agate was easy first with capitally developed blooms of Mdlle. Elise Dordan, Golden, and Madame Martha. Mr. G. Hawkins second, and Mr. Russell third. For the same number of fimbriated varieties, in bunches of three blooms to a bunch, Mr. J. Hawkins was first. Chardonnet, Croesus, Massange and Scapin were the best. Mr. Agate second. Single varieties were very attractive, seven growers competing. Mr. Hatch led the way with an even stand of large fully developed blooms of Nelly, Jane, Admiral Symonds, and Queen of Yellows as the most conspicuous. Mr. Agate was second, Golden Star shining brightly in the stand. Mr. Hawkins third. For six Japanese, any one variety, there were twelve competitors. Mr. N. Molyneux, with E. Molyneux, large, solid, and highly coloured blooms, led the way, Mr. Abrahams, with Avalanche, of good quality, following. Mr. Agate third with the same variety. In the class for six blooms of any one incurved variety Mr. N. Molyneux secured the leading position with Miss M. A. Haggas. He also took the premier award for two blooms, one Japanese and the other incurved, shown in glasses. Mr. Agate second.

Bouquets of Chrysanthemums and Fern made a rich display. Messrs. Perkins & Sons were first, with one of their usual arrangements. Mr. Agate second. For an epergne dressed with berries and autumn foliage Mrs. Conway was a good winner with a cheerful yet judicious arrangement. The same exhibitor took first honours for a glass stand or epergne dressed with Chrysanthemums and other flowers and Ferns, with a light and harmonious arrangement.

Fruit made an imposing display. For three bunches of black Grapes, Messrs. A. Questier & Co., Fordingbridge (manager, Mr. S. Castle) was first with Alicante, extra large berries of good colour. Mr. T. Hall, gardener to S. Montagu, Esq., M.P., South Stoneham House, Southampton, second, with the same variety. For three bunches any white Grape, Mr. Inglefield was first with fairly good Muscat of Alexandria. In the classes for two bunches of black and the same of white Grapes, Mr. Chalk, gardener to G. Read, Esq., Westwood, Salisbury, was first in both cases. Mr. N. Molyneux and Messrs. Questier & Co. followed in the order of their names. For fifty dishes of Apples and Pears, Messrs. G. Bunyard & Co., Maidstone, were easily first with splendid fruit all through, but especially such as Bismarck, Belle Dubois, Warner's King, Gascoigne's Seedling, Wealthy, The Queen, Belle Pontoise, and Reinette de Canada. Mr. John Watkins, Pomona Nurseries, Withington, Hereford, was a good second; Messrs. J. Cheal & Son third. For twenty-four dishes of Apples and Pears, Mrs. Evans, Moreton Court, Hereford, was first; Mr. T. Hall second.

Vegetables were excellent. For nine and six distinct varieties, Mr. Inglefield was first, staging good examples of leading kinds. The best collection of salading came from Mr. Abrahams. Messrs. Bunyard staged fifty dishes of Apples, "not for competition," consisting of leading varieties of excellent quality. We are unable to give a more detailed report of this large and admirable Exhibition.

CHISWICK.—NOVEMBER 6TH.

THE fifth annual Exhibition may be fairly described as a success, the Vestry Hall, in which it was held, presenting a gay appearance with the groups and cut blooms of Chrysanthemums. For a group arranged in a space not exceeding 60 square feet, Mr. A. Wright, gardener to E. H. Watts, Esq., Downhurst, Chiswick, secured first honours with admirable plants, well flowered. Some of his best flowers were—Incurved: Golden Queen of England, Mrs. J. Crossfield, Lord Wolseley, Jeanne d'Arc, Empress Eugénie, Barbara, and Mr. Bunn. Japanese: Edwin Molyneux, Elaine, Sunflower, Mons. Tarin, Mr. H. Willan, Pelican, and Maiden's Blush. Second, Messrs. W. Fromow & Sons, Sutton Court Nurseries, with a creditable collection. Twelve untrained plants, not exceeding 4 feet in height.—First, Mr. F. Mears, gardener to J. T. Thornycroft, Esq., Eyot Villa, Chiswick, with freely flowered attractive plants; second, Mr. J. R. Wood, gardener to Mrs. Sanderson, Chiswick. One trained specimen.—First, Mr. A. Wright, with a well flowered plant. Group of miscellaneous plants, to include Chrysanthemums, arranged for effect.—First, Messrs. W. Fromow & Sons, with a very tasteful display of Palms, Ferns, Orchids, &c.; second, Mr. A. Wright, who had some capital examples of *Pancratium fragrans* in flower.

Cut Blooms.—Twenty-four blooms of Chrysanthemums, twelve Japanese and twelve incurved, distinct.—Here the leading position was taken by Mr. C. J. Waite, gardener to Col. Talbot, Glenhurst, Esher. Noticeable amongst his Japanese were Stanstead Surprise, Sunflower, Golden Dragon, and Florence Percy. Incurved: Empress of India, Emily Dale, Golden Empress, Prince Alfred, and Princess of Wales;

second, having some good blooms, Mr. C. Long, gardener to E. P. Oakshott, Esq., Ealing. Third, Mr. W. Palmer, gardener to W. F. Hume Dick, Esq., Thames Ditton; a creditable display. For twelve incurved, first, Mr. William Palmer. The following were shown in grand condition:—Lord Alcester, Lord Wolseley, Cherub, Golden Empress, and John Salter. Second, Mr. H. Collyer, gardener to Mrs. Murrell, The Elms, Ealing. Of six incurved some fine flowers secured first prize for Mr. H. Head, gardener to W. Daniels, Esq., Inglewood, Kew. Second, Mr. C. J. Waite. Twelve Japanese.—First, Mr. C. J. Waite. Good in this stand were Fair Maid of Guernsey, Etoile de Lyon, and Boule d'Or. Second, F. Davis, gardener to E. Tautz, Esq., Castle Bar, Ealing. Third, Mr. W. Palmer. Six incurved, white.—First, Mr. H. Head, with Empress of India; second, Mr. R. Wood. Six incurved, coloured.—First, H. Head, with Golden Empress of India; second, Mr. W. Palmer, with Mr. Bunn; third, Mr. C. J. Waite, with Lady Hardinge. Six Japanese, coloured.—First, Mr. H. Head, with Madame C. Audiguier; second, Mr. C. J. Waite for Sunflower; third, Mr. W. Palmer for Val d'Andorre. Pompons and singles were well and successfully shown by Mr. H. Collyer, Mr. C. J. Waite, and Mr. E. Chadwick, gardener to E. M. Nelson, Esq., Hanger Hill House, Ealing; the last named exhibitor taking the premier position for a very handsome stand of Chrysanthemums gracefully interspersed with elegant Grasses and Ferns.

In the amateurs' classes (those not employing a regular gardener) the most successful exhibitors showing fine blooms were Mr. W. G. P. Clark, Hitchin, Mr. W. S. Larcomb, station master (Turnham Green station), and Mr. John A. Avey, Sutton Lane, Chiswick. In the cottagers' classes for Chrysanthemums very creditable flowers were staged by Mr. J. Bromley, 17, Miles Street, Hammersmith, and Mr. C. Garrod, 4, Vine Cottages, Chiswick.

Specimen stove or greenhouse plants in flower, first, Mr. F. Mears, with a finely flowered example (fifteen flowers) of *Cypripedium insigne*; second, Mr. A. Wright, with *Azalea narcissiflora* perfectly wreathed with flowers. Six Chinese Primulas, first, Mr. C. J. Waite, with beautifully fresh, well flowered plants; second, Mr. J. Huckelsby, gardener to B. Hardy, Esq., Gordon House, Chiswick. Six table plants, first, Mr. A. Wright, fine stuff; second, Mr. E. Chadwick. In the classes for Apples and Pears the most successful exhibitors were Mr. C. J. Waite, Mr. A. Wright, Mr. E. Chadwick, and Mr. C. Long. Three bunches of Grapes, first, Mr. F. Davis, with good Gros Colman; second, Mr. C. J. Waite.

ASCOT.—NOVEMBER 6TH AND 7TH.

THE autumn Exhibition of this Society took place as usual in the grand stand, and was quite equal to any of its predecessors. Groups of Chrysanthemums are always remarkable here for their excellence. The spirit of emulation appears to be very strong in the minds of the growers in this neighbourhood, hence the splendid competition and good quality of the exhibits, especially in the cut bloom classes, amongst which there could not be found a bad stand. The most important class was that for eighteen Japanese and the same number of incurved, all to be distinct, and for which a first prize of £3 and a silver cup were given, to be won three times. Great interest was attached to this class by the reason that the last two years Mr. Page, gardener to H. P. Leschallas, Esq., Windlesham, had succeeded in winning the coveted award; but this year the winner was Mr. W. Lane, gardener to Miss Dunning Smith, Ascot, who won by the superiority of both his incurved and Japanese, but especially the former, and though not quite so large as those of his opponent gained in finish, the whole being neatly staged and very fresh. The incurved were—Back row: Alfred Salter, Lord Alcester, Queen of England, Golden Empress, Empress of India, Golden Queen of England. Middle row: John Salter, Princess of Wales, Lord Wolseley, Jeanne d'Arc, Nil Desperandum, Prince Alfred. Front row: Violet Tomlin, Charles Gibson, Mr. Brunlees, Miss M. A. Haggas, Mrs. J. Coleman, Refulgens. Japanese.—Back row: Edwin Molyneux, Avalanche, Etoile de Lyon, Marguerite Marrouch, Madame Baco, M. E. A. Carrière. Middle row: Madame J. Laing, Condor, Stanstead Surprise, Mr. A. H. Neve, Mr. Cannell. Front row: Thunberg, Bertha Flight, Carew Underwood, Belle Paule, Criterion, Volunteer. The Japanese from Mr. Page were of excellent quality and well staged. Mr. J. Hughes, gardener to H. F. De Paravicini, Esq., Bracknell, took third place with a capital lot. Four competed.

In the class for twenty-four incurved distinct varieties there were six competitors. Mr. Page led the way with a very even collection of medium-sized blooms, the following being a few of the most noteworthy:—Violet Tomlin, Princess of Wales, Mrs. S. Coleman, Princess Beatrice, Barbara, Miss M. A. Haggas, Mrs. Heale, Lord Alcester. Mr. Hughes second. Third Mr. Tomlin, gardener to F. Ashley, Esq., Sunninghill. For twenty-four Japanese, distinct varieties, six again competed, the best coming from Mr. Page—large, good colour, and great breadth of florets. The names were—Back row: Avalanche, E. Molyneux, Stanstead White, Sunflower, Madame Baco, Bertha Flight, Val d'Andorre, Madame B. Pigny. Middle row: Etoile de Lyon, Condor, Madame C. Audiguier, Marguerite Marrouch, Maiden's Blush, Ralph Brocklebank, Alba Fimbriata, Madame J. Laing. Front row: Criterion, Mons. Bernard, Hamlet, Marsa, Sarah Owen, Jeanne Delaux, Gloriosum, and Mrs. W. K. Harris. Mr. H. Tomlinson, gardener to F. Ricardo, Esq., Old Windsor, was a very close second; and Mr. Cole, gardener to E. Hamilton, Esq., Sunningdale, third. In the class for twelve incurved varieties, distinct, amongst five competitors Mr. Popple, gardener to Lady Cowell Stepney, Sunninghill, took leading position with medium sized, well finished, fresh blooms. Mr. Bullimore, gardener to A. Southard, Esq., Bracknell, was a good second, in whose stand the

premier incurved bloom was found—a very fine one of Princess of Wales. For six varieties the winners were Mr. Cowie, gardener to K. Oliver, Esq., good in all respects; Mr. Richards, gardener to the Rev. R. Macdonald, Ascot; Mr. Bird, gardener to C. J. Barnett, Esq., Sunninghill. In the class for six incurved, one variety, excellent blooms were staged. With Queen of England, symmetrical and fresh examples, Mr. Lane led the way, followed by Messrs. Page and Godfrey, Bagshot, both staging Lord Wolseley in good condition. For twelve Japanese varieties, distinct, Mr. Bullimore led the way, followed by Mr. Popple, and Mr. Hawthorne, gardener to the Rev. R. Kerr Pearce, Ascot, was third, all staging fine and well finished blooms. For six Japanese, distinct, Mr. Cowie was first. With six Japanese, one variety, Mr. Godfrey was an easy first with magnificent examples of Avalanche, one of which was chosen as the premier bloom in the Japanese section. Mr. Page was second with good Stanstead White; Mr. Hughes third with Stanstead Surprise.

Much encouragement was offered in the reflexed section, the first prize being a silver cup along with a money prize for twelve distinct varieties, which Mr. Page succeeded in carrying off with a capital stand of blooms, not extra large but deep, well coloured and developed. King of Crimson, Felicity, Mrs. Forsyth, Dr. Sharpe, Cloth of Gold, Phidias, Golden Christine, Cullingfordi, Temple of Salomon, Fred Hart, Pink Christine, and James Carter. Mr. Cole was second; and Mr. Godfrey third. For six Anemone flowered varieties Mr. Richards took premier honours with large substantial blooms with well developed centres, of Miss Annie Lowe, Lady Margaret, Empress, Fleur de Marie, G. Sand, Prince of Anemones. Mr. Guyett, gardener to C. D. Kemp-Welch, Sunningdale, second. To Mr. Lane was also awarded the bronze medal of the N.C.S. for the most meritorious exhibit of Chrysanthemums—viz., the cup class blooms previously noted.

For the best collection of Chrysanthemums in pots, arranged in a semi-circular space, there were six competitors, Mr. Cowie being well ahead by the superiority of the blooms, many of the incurved section being good enough for the stands. The plants were dwarf, well clothed with foliage, and evenly arranged. Mr. W. Lane was second, also staging well. Mr. May, gardener to General the Hon. H. F. Keane, C.B., Rosemount, Sunninghill, third. A class was provided for bush grown plants in six distinct varieties. Mr. Richards' Pompon varieties, averaging 3 feet across, and freely flowered, being the most noteworthy. The best group of miscellaneous plants arranged for effect was staged by Mr. Hughes.

Vegetables were contributed by eight competitors, Mr. Lane being first with good produce. Mr. C. Cooper, florist, Sunninghill, secured the chief prize for black Grapes—Alicante; and Mr. Page for white Grapes—Muscat of Alexandria. Mr. Godfrey was the most successful exhibitor of culinary and dessert Apples, and had large, highly coloured fruit.

PUTNEY.—NOVEMBER 6TH AND 7TH.

OF the thirteen exhibitions held in Putney by this Society that on Thursday and Friday last week was entitled to a place amongst the best, both as regards the groups and cut blooms. The Assembly Rooms devoted to it are unfortunately too small, though the prominent position they occupy in the town renders the site an important one for a Show of this description. There was not, however, sufficient space to display the numerous exhibits to the fullest advantage, and but little room was left for the visitors, who crowded the Show on the evening of each day. The Society had the satisfaction of finding their efforts well appreciated, and to accomplish these results the Committee and Secretary, Mr. J. Moore, have worked together well.

The groups were uncommonly good, by far the best that we have seen this season, especially that with which Mr. G. Stevens, St. John's Nursery, Putney, succeeded in winning the silver cup that has cost him so many years' struggle. This time he won easily, the plants, blooms, and arrangement being all that could be desired, and far exceeding the character of average groups at shows. Many of the blooms were fitted for cutting and showing in competition, the Japanese being unusually fine, Avalanche, Etoile de Lyon, Sunflower, Golden Dragon, and Edwin Molyneux standing out most conspicuously, while the leading varieties of the Queen type in the incurved were also well represented. Mr. Springthorpe, gardener to R. H. Alexander, Esq., Gifford House, was a good second, Messrs. Portebury and Dail following. Specimen plants were numerous, those shown by Mr. Knowles, gardener to Mrs. Egerton Solner, Roehampton, being the best; while amongst amateurs, Mr. W. B. Faulkner, Fairholm, Worple Road, Wimbledon, was deservedly first for a group of plants bearing remarkably fine blooms. Mr. Sullivan, gardener to D. B. Chapman, Esq., Downshire House, took the lead as usual for very neat plants; Mr. Portebury being second for rather heavier, but well-grown plants. For stands of flowers, Mr. Newell, gardener to Sir Edwin Saunders, Fairlawn, Wimbledon, won first honours for a tasteful and effective arrangement. Bouquets, fruit, and vegetables were also well represented.

The cut flower classes were an important feature in the Show, a considerable portion of the space at the disposal of the Committee being occupied with the tables devoted to these. Three stands of twenty-four incurved in not less than eighteen varieties were shown, Mr. Sullivan taking the first place for excellent, solid, clean examples arranged in the following order:—Back row: Golden Empress, Prince Alfred, Emily Dale, Alfred Salter, Emily Dale, Queen of England, John Doughty, and Lord Alcester. Middle row: John Salter, Miss Haggas, Jeanne d'Arc, Golden Empress, John Doughty, Violet Tomlin, John Salter, and another variety. Front row: Princess of Wales, Nil Desperandum, Mrs. Heale

Refulgence, Hero of Stoke Newington, Jardin des Plantes, Mr. Brunlees, and Princess Beatrice. Messrs. Knowles and J. Bentley, gardener to Sir T. Gabriel, Bart., Edgecumbe House, Wimbledon Park, following. Mr. Knowles had the best twelve incurved; handsome flowers of Empress of India, Alfred Salter, Queen of England, Lord Wolseley, Prince Alfred Lord Alcester, Violet Tomlin, Princess of Wales, Emily Dale, Lady Hardinge, Jeanne d'Arc, and Miss Haggas. Mr. W. Burnes, gardener to Sir J. Brunlees, Argyle Lodge, Wimbledon, took the second place with fresh flowers. Mr. Knowles was also first with twelve Japanese, capital examples of Sunflower, Condor, Val d'Andorre, Stanstead Surprise, Belle Paule, Triomphe de la rue des Châlets, Mrs. Wright, Gloriosum, M. Elliott, Etoile de Lyon, Edwin Molyneux, and Avalanche. Mr. Sullivan was second in this class; and these two exhibitors held the same relative positions for twenty-four Japanese. Mr. C. Bentley, Cedar Court Gardens, was first for twelve Pompons, neat examples of Sœur Melanie, Orange Beauty, Aglaia, Mr. Astie, Miss Stuart, Bob, St. Michael, Mdle. Marthe, Black Douglas, President, and Golden Madame Marthe. In smaller classes Messrs. Bradford, Knowles, and Sullivan were the prizetakers, Mr. W. F. Faulkner having the finest six incurved, wonderful blooms for an amateur grower, including a Queen of England, which was selected as the premier in the Exhibition.

TOTTENHAM AND EDMONTON.—NOVEMBER 6TH AND 7TH.

A FAVOURABLE schedule of sixty classes did not fail to bring about a good Exhibition. For twenty-four blooms, twelve incurved and twelve Japanese, distinct varieties, Messrs. Prickett & Sons, St. Ann's Road, Stamford Hill, were placed first with a fairly good collection, consisting of Japanese: Elaine, Madame C. Audiguier, Avalanche, Aurantium, Madame Baco, Sunflower, Belle Paule, Mrs. J. Wright, Lady Lawrence, Mons. Bernard, Ralph Brocklebank, and Edward Délaux. Incurved: Lord Wolseley, Empress of India, Violet Tomlin, Mrs. Heale, George Glenny, Miss Haggas, Jardin des Plantes, Princess of Wales, Mrs. G. Rundle, Nil Desperandum, G. Glenny, and Princess Beatrice. For twelve blooms of Japanese, distinct, Messrs. Prickett were again first with Gloriosum, Avalanche, Sunflower, Stanstead White, Elaine, Mons. Bernard, Belle Paule, good; Sarah Owen, Stanstead Surprise, Mrs. J. Wright, Ralph Brocklebank, and Val d'Andorre. For twelve blooms, incurved, Mr. G. Chalkley, gardener to J. A. Drop, Esq., gained the first award with neat but small flowers. The next class was for Anemones, which, as exhibited by Mr. Henderson, gardener to J. Speiers, Esq., were very good, and consisted of Gluck, Empress, George Sand (two), Cincinnati (two), perfect; Grande Alvéole, J. Thorpe, jun. (two), La Marguerite, highly coloured; Fleur de Marie, and Nouvelle Alvéole. Mr. Chalkley was second, and Mr. Ives, gardener to H. J. Chalkley, Esq., was third. Mr. Henderson also staged six magnificent blooms of Japanese Anemones, the best we have seen for the season: Jeanne Martz (two), Marguerite Souille (two), Sœur Dorothee Souille, and a variety named La Duele.

For twenty-four blooms, twelve incurved and twelve Japanese, distinct varieties, Mr. Henderson was again the most successful exhibitor, with good blooms of Avalanche, Etoile de Lyon, Ralph Brocklebank, a seedling after Baronne de Prailly, Criterion, Edwin Molyneux, La Triomphante, Sarah Owen, Val d'Andorre, Maiden's Blush, Mdle. Lacroix, Marguerite Marrouch. Incurved: Queen of England, Lord Alcester, Lord Wolseley, Emily Dale, Mrs. Heale, Beverley, Golden Empress, Empress of India, Mr. Bunn, Prince Alfred, Jeanne d'Arc, and Venus; and for twelve incurved Mr. Henderson gained another first prize. In the class for twelve Japanese, Mr. W. Welfare, gardener to Mrs. Hodgson, Mr. Henderson, and Mr. Elliott, gardener to Mrs. Wolstenholme, were placed in the order of their names. Pompons and Anemone Pompons were also well represented by several attractive stands.

Plants were grandly shown. Mr. Thompson, gardener to A. Sanders, Esq., was first for two with Bouquet Fait and Bertier Rendatler. Mr. Davey, gardener to C. Pain, Esq., was a very good second, showing W. Robinson and Le Chinois; Mr. Ives third. For four plants Mr. Paine was first with splendid examples of Dr. Sharpe, La Triomphante, Tokio, and Christine, each plant carrying fully sixty good flowers. Mr. Thompson was placed second. For four standards, Messrs. Davey, Hudson, and Thompson again shared the honours in the order of their names. Several groups were staged, the best coming from Messrs. Hudson, Elliott, and Ives. There were numerous classes for both amateurs and cottagers.

CRYSTAL PALACE.—NOVEMBER 7TH AND 8TH.

IN unpropitious weather the last of the series of 1890 floral exhibitions of the Crystal Palace Company was opened on Friday last. The exhibits were arranged throughout the eastern transept. In the largest class for twenty-four incurved and twenty-four Japanese, there were 624 blooms staged by thirteen competitors. Mr. C. J. Salter, gardener to T. B. Haywood, Esq., Woodhatch, Reigate, won the premier position with excellent stands of blooms, comprising the following varieties. Incurved—Back row: Queen of England, Empress of India, Golden Empress, Violet Tomlin, Empress of India, Queen of England, Lord Alcester, Prince of Wales. Middle row: Miss Haggas, John Doughty, fine; Jeanne d'Arc, good; Prince Alfred, Mrs. Heale, Golden Empress, John Salter, Princess of Wales. Front row: Mrs. Heale, Barbara, Jardin des Plantes, Empress Eugénie, White Venus, Mrs. Coleman, very good; Barbara, and Princess of Wales, grand. Japanese—Back row: Carew Underwood, Stanstead White, Edwin Molyneux, Comte de Germiny, Madame J. M. Pigny, Edwin Molyneux, Puritan, Fair Maid of Guernsey. Middle row: Puritan, Val d'Andorre, Boule d'Or, Condor, Carew Underwood, Sunflower, Avalanche, Stanstead Surprise. Front row: Sunflower, Mrs. J. Laing, Avalanche, Marsa, Maiden's Blush, Val

d'Andorre, Lady Lawrence, and Sarah Owen. The blooms in both sections were large and of high finish. Mr. Gibson, gardener to J. Wormald, Esq., Morden Park, was a close second with a fine collection, his Japanese being magnificent, and incurved very good, but weaker than the first prize collection. Mr. J. Blackburne, gardener to John Scott, Esq., Elmstead Grange, Chislehurst, was placed third, and Mr. Alpin, gardener to W. Meath Baker, Esq., Harfield Court, Gloucester, fourth. Mr. Blackburne's Japanese were very good, and he had fine blooms of Empress of India and Golden Empress. The fourth prize collection contained, besides a magnificent bloom of Mrs. Alpheus Hardy, fine examples of Miss Haggas, Princess of Wales, and a sport from Lord Alcester.

In the class for eighteen incurved varieties, distinct, there were seven collections. Mr. Salter was again to the front with Lord Wolseley, Golden Empress, Queen of England, Mrs. Heale, John Salter, Empress of India, Jeanne d'Arc, Violet Tomlin, John Doughty, Prince Alfred, Miss Haggas, Princess of Wales, Baron Beust, Princess Teck, Mrs. Coleman, Jardin des Plantes, Empress Eugénie, and Barbara. Mr. H. Shoesmith, gardener to M. Hodgson, Esq., Shirley Cottage, Croydon, took the second prize with an even and neat collection; Princess of Wales, Violet Tomlin, and Mrs. Heale were very conspicuous and fine. Mr. C. Cox, gardener to John Trotter, Esq., Brickenden Grange, Hertford, was placed third. There were nine collections staged in the class for twelve incurved varieties, and Mr. G. Carpenter, gardener to Major C. Browne, Broad Oaks, Byfleet, Surrey, secured first honours with fine Lord Alcester, Lord Wolseley, Empress of India, Prince Alfred, Alfred Salter, Jeanne d'Arc, Queen of England, Golden Queen, Princess of Wales, John Salter, Princess Teck, and another. A magnificent stand, Mr. A. Falgate, gardener to Her Grace the Duchess of Wellington, was placed second; his blooms were large, but lacked refinement, being too old. Mr. A. Turner, gardener to C. F. Murray, Esq., Woodcote Hall-Epsom, was third. For six incurved, one variety, Mr. J. Richard, Woodbine Nursery, Wanstead, Essex, was awarded first place with very solid and clean Empress of India; Mr. John Snow, gardener to C. & A. De Murrieta, Esqs., Wadhurst Park, Sussex, was second for perfect highly coloured Violet Tomlin; and Mr. Turner, with Empress of India third. Nine collections were staged.

The class for eighteen Japanese, distinct, brought eight competitors, and Mr. Glen, Worth Park, Crawley, outdistanced the others with large bright substantial blooms of the following:—Stanstead White, very fine; Stanstead Surprise, Ralph Brocklebank, Mrs. F. Jameson, Meg Merrilies, Etoile de Lyon, Thunberg, good; Comte de Germiny, Baronne de Prailly, Avalanche, grand; Edwin Molyneux, Sunflower, good; Mons. Bernard, Mdle. Lacroix, Gold Dragon, Maiden's Blush, Martha Harding, and Madame Baco. Mr. J. Blackburne secured the second place, and C. E. Shea, Esq., The Elms, Foots Cray, the third, both exhibiting grandly. There were no less than fifteen collections competing in the class for twelve varieties, distinct, and the first prize was awarded to Mr. J. Harker, gardener to H. Shindler, Esq., Oakwood Lodge, Epsom, for the following:—Stanstead White, Stanstead Surprise, Mons. W. Holmes, Sunflower, Madame C. Audiguier, Val d'Andorre, M. Pigny, Japonaise, Edwin Molyneux, Maiden's Blush, Mons. Bernard, Avalanche. The second award was made to E. Mawley, Esq., Rosebank, Berkhamstead, for a very smart stand. Mr. G. Carpenter was third. The class for six Japanese, one variety, produced sixteen grand collections. Messrs. Glen, Howe, and Mawley were placed in order of their names, Avalanche winning the premier award, followed very closely with six wonderfully bright blooms of Edwin Molyneux, Avalanche winning the third position.

Reflexed and Anemone varieties appear to be regaining favour. For twelve reflexed, not less than eight varieties or more than two of one sort, there were ten stands presented in capital condition. The first prize was awarded to Mr. Carpenter, who had two Peach Christine, two Cloth of Gold, two Pink Christine, Golden Christine, two Mrs. Forsyth, Dr. Sharp, Cullingfordi, and King of Crimsoms. Mr. A. Coomber, gardener to the Earl of Dudley, Hinly Hall, Dudley; and Mr. A. Felgate were placed second and third respectively. A similar class was organised for large Anemones (Japanese not admissible). A large number competed, and the Judges first made their awards as follows:—First, Mr. Carpenter; second, Mr. Salter; third, Mr. Coomber, but as most of the boards contained one or more Japanese varieties, or closely allied, a readjustment was made, and after considerable argument the first prize was awarded to Mr. Sullivan, Roehampton; Mr. Coomber being placed second; and Mr. Searing third. Messrs. Carpenter's and Salter's collections were disqualified. The best Pompons were staged by Mr. Chadwick, gardener to E. M. Nelson, Esq., Hanger Hill House, Ealing. Mr. Salter was placed second; and Mr. C. S. Bowman, London Road, Croydon, third. The collections of Anemone Pompons were very attractive. Mr. Slade, gardener to Lady Bowater, Richmond Park, was a very good first; and Messrs. Chadwick and Ballard the other prizes in the order of their names. Mr. Carpenter secured first place in the class for six Japanese Anemones with two Madame Cabrot, two Souvenir de Madame Blandinieres, and two Mons. Pankoucke; and Messrs. Sullivan and Coomber the second and third places. Messrs. Chadwick and Ballard were the only exhibitors for twelve singles, distinct, and were placed in the order of their names.

Groups.—Three classes were provided for decorative groups, which formed pleasing and attractive objects, and were arranged on each side of the cut bloom tables, amateurs showing in great force. The premier award was gained by Mr. J. Gravett, gardener to Dr. Heckley, Upper Norwood, for a very beautiful group, admirably arranged. Mr. T. R. Wells,

gardener to — Ralph, Esq., Cranbrook Villa, Fox Lane, Upper Norwood, was a very good second; and Mr. Ford, gardener to Sir C. Pigot, Bart., Wrexham Park, Slough, was placed third for a light arrangement and good flowers. There were only four collections in the large size groups, 100 square feet, Messrs. Laing & Son, Forest Hill, securing the two first prizes, and Messrs. J. Mobsy & Son, 147, Mowflat Road, Thornton Heath, the second in the incurved varieties; and Messrs. Carter & Co., High Holborn, the second prize in the class for Japanese varieties. Both the first and second prize collections restricted to the Japanese forms were far the most attractive, and included all the new and popular kinds.

Plants.—Specimen trained plants have seldom been so well represented as on the present occasion. For six trained specimens, incurved varieties, Mr. Wesker, gardener to A. Heaver, Esq., Streatham Elms, Tooting, was deservedly awarded the first prize for neatly trained and well-bloomed examples of Lord Alcester, Baron Beust, Lord Wolseley, Mrs. G. Rundle, Prince of Wales, and Mrs. Dixon. Mr. Cherry, gardener to Mrs. Gabriel, Norfolk House, Streatham, was a very good second. In the class for four specimens, Mr. W. Clark, gardener to J. H. Lile, Esq., Devon House, Brixton, was first with Mrs. Rundle, Mrs. Dixon, Lady Hardinge, and Guernsey Nugget. Mr. Weston, gardener to D. Martineau, Esq., Clapham, took the second place. For six Japanese, Mr. W. Clark again gained first honours with attractive plants of Elaine, Margot, Source d'Or, Dr. Macary, Jupiter, La Triomphante (very good). Messrs. Wesker and Cooper were the other prizewinners in the order of their names; and for four Japanese Messrs. Cherry, Weston, and R. Clark secured the first, second, and third prizes respectively. A very strong class was the trained Pompons. Mr. James Hinglis, gardener to Mrs. Longsdon, South Norwood, had beautiful plants of Lilac Cedo Nulli, Aureole Boreale, Maroon Model, White Cedo Nulli, A. Justine, and Golden Cedo Nulli. Messrs. Clarke and Weston also staged good plants, and were placed in order of their names. Several collections of Primulas were staged, but they do not call for any special reference. Messrs. Carter, Bateman, and Edwards were the principal exhibitors.

Among the miscellaneous exhibits Messrs. Cheal & Sons, Crawley, contributed about sixty dishes of Apples and Pears in fine condition; and Messrs. Smith, Worcester, a like number. A very large and fine collection of Potatoes was sent by Messrs. Sutton and Sons, and for the special prizes offered by them for six dishes Messrs. Hughes, Friend, Wiles, Hazell, Howard, and Cherry shared the six prizes in the order of their names. Messrs. Peed & Son staged a group of cut Chrysanthemum flowers intermixed with Maidenhair Ferns. The following Chrysanthemums were recognised by the Judges:—Mons. Charles Lebocqz (Mr. G. Stevens, Putney), Mrs. F. Jameson (Messrs. Reid and Borneman, Sydenham), Mrs. C. Wheeler, Madame Marie Hoste, Vivian Morel (Messrs. J. Laing & Son, Forest Hill). The Exhibition was admirably arranged by Mr. Head.

ST. NEOTS (HUNTS).—NOVEMBER 10TH.

THOUGH the Society located in the quiet but pleasant little country town, St. Neots, has only held seven Exhibitions of Chrysanthemums, a considerable improvement has been effected in the cultivation of these plants, both in the immediate district, and for a long distance around. At this year's Show the advance in the quality was still more marked than usual, and thus afforded ample compensation for the moderate competition in most of the classes. A bright, varied, and attractive display was provided, and the Committee, with their energetic and admirably business-like Secretary, Mr. Rachelous, have every reason to be satisfied with the result of their year's labours.

The Corn Exchange was devoted to the exhibits, the large hall and a smaller room being filled with cut blooms, plants, groups, fruit, vegetable, and floral decorations. Upon a long central table the principal stands of cut blooms were staged in competition, and one class filled the whole length on one side, presenting a capital array of well-developed blooms. Three years the St. Neots Society decided to provide an open class, with a challenge cup as the first prize offered under the following conditions:—

Thirty-six blooms of Chrysanthemums, eighteen to be incurved in not less than twelve varieties, eighteen to be Japanese in not less than twelve varieties, not more than two blooms of any variety allowed.—First prize, a silver challenge cup, value ten guineas, and 60s. in money. Second prize, 30s. Third, 20s. Fourth, 10s. The challenge cup must be won by the same exhibitor twice in succession or three times in all before it becomes his property, but on giving a written acknowledgment for the same, the winner for the year (except it be finally won) may hold it up to fourteen days of the next Show, when it must be returned to the Society in perfect condition. The first challenge cup having been won twice in succession by Mr. R. Adams, gardener to G. B. Hudson, Esq., Frogmore Hall, Hertford, it became his property, and another was therefore provided this year, which attracted five competitor. The cup was well won by Mr. R. Petfield, gardener to A. J. Thornhill, Esq., Diddington Hall, Huntingdon, who also secured the National Society's Centenary medal for the best incurved blooms in the Show, and the same Society's certificate for the best Japanese. His blooms were most meritorious, the incurved being especially well finished, clean, bright, fresh blooms. The Japanese were also of good substance, and rich and pure in colour. The varieties were as follows:—Incurved, back row: Queen of England, Lord Wolseley, Miss Haggas, Violet Tomlin, Queen of England, and Lord Wolseley. Middle row:

Prince Alfred, Mrs. Coleman, Alfred Salter, Jeanne d'Arc, Prince Alfred, and Miss Haggas. Front row: Lord Alcester, Princess of Wales, Mrs. Heale, Violet Tomlin, Mrs. Coleman, and Novelty. The Japanese were, in the back row: Avalanche, Madame C. Audiguier, Sunflower, Etoile de Lyon, Mrs. Cannell, and Madame C. Audiguier. Middle row: Etoile de Lyon, Meg Merrilies, Edwin Molyneux, Avalanche, Sarah Owen, and Meg Merrilies. Front row: Mdlle. Lacroix, M. Bernard, Ralph Brocklebank, Madame J. Laing, Stanstead White, and Criterion. The second place was taken by Mr. Myers, gardener to the Earl of Sandwich, who had very handsome Japanese and clean, neat incurved. Mr. A. Hornett, gardener to G. B. Hudson, Esq., Frogmore Hall, Walton, Hertford, was third with smaller but neat fresh blooms, and Mr. F. H. Anthony, Leicester, was fourth.

The best twelve incurved blooms were also staged by Mr. Petfield, who had fine examples of Lord Wolseley, Jeanne d'Arc, Le Grand, Miss Haggas, Violet Tomlin, Eve, Prince Alfred, Lord Alcester, Mrs. Coleman, Princess of Wales, Alfred Salter, and Queen of England. Mr. Myers secured similar honours for twelve Japanese, capital blooms of Etoile de Lyon, Sunflower, Madame Baco, Gloriosum, Maiden's Blush, Triomphe de la rue des Châlets, Madame C. Audiguier, Mrs. Beale, Thunberg, W. G. Drover, and Jeanne Délaux. The same exhibitor was first for twelve Pompons, charming blooms of good varieties.

The best four specimen plants were shown by Mr. Redman, gardener to J. H. Goodgames, Esq., who was adjudged the first prize and the National Society's certificate for the best plants in the Show. Mr. Redman was also first for a group of Chrysanthemums, being closely followed by Mr. Myers. These two exhibitors were also the principal prizetakers for bouquets and floral decorations, Mr. Stevens leading with vegetables.

COPPIN'S TREE PRUNER.

MESSRS. G. COPPIN & SONS, Addington, Surrey, having sent us one of their tree pruners for trial, and this having proved highly satisfactory, we direct attention to the implement at a seasonable time. It is light, strong, cuts cleanly and easily, only one action being needed, drawing the handle down, a spring making all ready in a moment for the next cut. The hooked end of the implement is simply placed over the branch, the handle pressed down, and the circular knife cuts downwards, severing any branch that is not too large for the hook, about as easily as cutting a Carrot with a knife. Pruners of trees in town and country have found this implement to give great satisfaction, and we found that it did all that was claimed for it by the inventors and patentees. Where very tall trees require lopping, "Coppin" will lop them as fast as it is hooked over the parts to be removed.

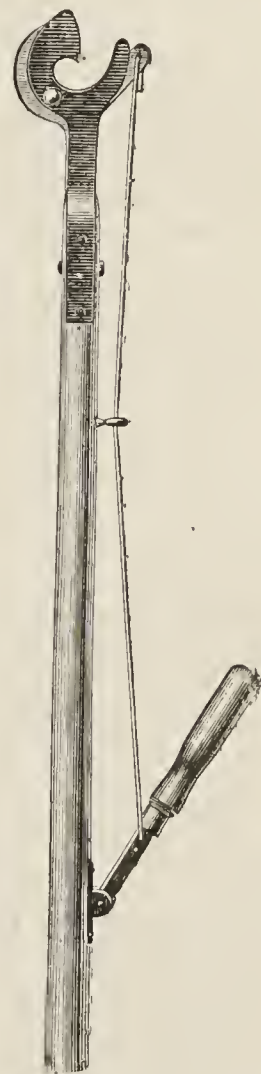


FIG. 58.



FRUIT FORCING.

PEACHES AND NECTARINES.—*Earliest Houses.*—Where it is required to have fruit ripe in April or early May the houses should be put in order without delay, and the lights put on and closed by the middle of this month, fire heat not being applied until the beginning of December. Alexander and Waterloo Peaches are the earliest to ripen, and very desirable for forcing to afford early dishes of ripe fruit, but they are not equal in quality to Hale's Early, Royal George, or its fine form Stirling Castle. These, however, will not ripen so early by some weeks, but they afford an excellent succession. The house may be kept close, but admitting air freely above 50°, employing fire heat only to prevent the temperature falling below 35°. The more slowly the trees are excited the stronger will be the blossom and the better chance of a good set, about which there need be no anxiety, only the wood is well ripened and the trees are duly supplied with water at the roots. A thorough soaking of water should be given the inside borders, and if the trees are weakly a soaking of liquid manure, not too strong, will tend to a more vigorous break. Sprinkle the trees in afternoon of fine days, but in dull weather morning syringing and sprinkling in the afternoon will be sufficient, it not being desirable to keep the trees constantly dripping with moisture. The outside border must be well protected with litter or dry fern, and if wooden shutters are available they will be advantageous in throwing off excessive wet.

Succession Houses.—Except in the latest house all the leaves are off, and from these they must not be forcibly removed until they part readily from the trees. The trellis may be lightly shaken, or the trees brushed over lightly with a broom, but there must not be any attempt at forcibly removing them with the hand or other means. When the leaves are all down unfasten the trees from the trellis, prune them, thoroughly cleanse them and the house, and if need be paint the wood-work and trellis. Tie the trees to the trellis, not too tightly, as abrasions of the bark are prolific of gumming. Remove the surface soil and supply fresh, give a good watering to the inside borders, thereby having all in readiness for a start when required. If the lights are not removed admit air to the fullest possible extent so as to keep the trees as cool as possible, but it is better to remove the roof lights.

Lifting.—Planting Fresh Trees.—Any trees that do not bear satisfactorily should be lifted, have their long bare roots shortened, and those retained laid in fresh material nearer the surface. Where the soil is light it should be well firmed about the roots; but this will not compensate for more substantial material and steady supplies of nutriment. Lifting should always be attended to as soon as the leaves give indication of falling, and with a moderately moist condition of the soil the roots will push fresh rootlets, and be able to cater for blossom and young fruit, whereby a good set is assured, lifted trees stoning the fruit well. Trees for planting in houses are best trained to walls three or four years, lifted annually, or prepared for removal by digging round them a year previously. Such trees move with abundance of fibres, and being carefully planted they force well the first season; but they must not be brought on too quickly, and must not be overcropped. Such trees are preferable to planting young ones, which in rich borders are apt to grow too freely and fall a prey to gum, or they require time to become furnished with bearing wood, not fruiting much in the first two or three years, hence the advantage of planting trees in an already bearing state.

STRAWBERRIES IN POTS.—All plants for early forcing should be in frames, with a view to protect them from heavy rains only. They cannot have too much air, therefore tilt the lights in mild wet weather, and remove them altogether when it is fair and warm, keeping close only when frost prevails. Do not place them in Peach or other houses where they will be subjected to drying currents of air. Evaporation in such is constant and excessive, wastes the energies of the plants, and not infrequently so dries the soil at the sides of the pots as to destroy the active feeders. Drought is the greatest bane of the Strawberry; those in frames must have water as required, always keeping the soil properly moist. Plants for midseason and late forcing are just as well stood on ashes, and plunged over the rims of the pots in that material or cocoa refuse, the situation being sheltered, but not shaded.

Batches of La Grosse Sucrée, Vicomtesse Hericart de Thury, or other early sorts must be held in readiness for starting next month where early fruit is required. There is no question that a Strawberry house is the most suitable, as the wants of the plants can be furnished according to their advantageous requirements, which is not always the case when the plants have to be forced in vineries or Peach houses, but they are grown successfully in such structures, the chief point being not to bring them on too rapidly. An early Peach house takes a good batch and is particularly suited to such varieties as Noble and Auguste Nicaise, as they do not bear as much heat in the early stages of forcing as La Grosse Sucrée. In the case of plants having well developed crowns and abundant roots there is nothing to fear as regards a satisfactory issue, but in a late season there is little prospect of satisfactory early crops, and the plants should be started later or be brought on very gradually. That, however, is not applicable in places where ripe fruit must be had by a given time. When the plants are late, as they are this year, their starting satisfactorily may be enhanced by making up a bed of leaves about 2 feet in height, and place the plants in a frame upon it, bringing up the plants so as to be just clear of the glass, packing the spaces between the pots with damp leaves. The bottom heat at the base of the pots must not exceed 65°, the top being kept cool, air being freely admitted, 50° of top heat not being exceeded, and when mild withdraw the lights. Activity at the roots by the means of the warmth is promoted and the crowns will plump, the trusses being advanced considerably in embryo. In three weeks to a month of this treatment the pots must be withdrawn (but it is better if the bed has cooled), raising them gradually so as to insure the plants bearing the temperature of the Strawberry house or other structure without check. If taken direct from the bed the roots at the sides of the pots would in all probability get chilled, therefore they must not be taken direct from the warm bed to the shelves. Very careful treatment is required to secure a satisfactory result with very early forced plants in seasons like the present.

with improperly prepared syrup is the result of advisers having copied from the American method. The proportions of sugar and water being "20 lbs. of the former to 8 of the latter," a syrup far too thick and clammy for bees to store, and when stored becomes candied in the cells, bees often dying from want, with an abundance of candied syrup in the hive. By making the proportions of the best cane sugar and soft water equal, a syrup is formed congenial to the bees, and is a sure and safe food for them at any time. When sugar is properly dissolved with its weight of water there is little fear of its being burned into caramel, which is injurious to bees, nor of killing those those that get smeared with it. On page 413, eighth line from the top, I was represented as using "beet" sugar; it should have been best sugar. I do not use beet sugar for anything.

THE BEST FEEDER.

The best feeders are those from which the bees take food the most readily, and which give the least trouble to the bee-keeper to supply. All top feeders are liable to cause a draught, and is at the best a troublesome way of feeding. It is more natural for the bees to carry up than to carry down, and as a rule bees carry up syrup from under feeders when it is untouched in upper ones. It is a very old axiom in bee-keeping, "Keep the crowns of your hives warm, and there is no fear of the bees." The frame feeder is an exception to all upper feeders, as there is practically little or no space to create a draught, and is specially and well adapted for nursing weak hives. This year my hives took up 6 lbs. of syrup from bottom feeders in less time than they took down 2 lbs. from upper ones, and the Punic bees took that quantity up in seven hours, being as fast again as any of the other varieties did. The above quantity is about the average I allowed each hive that was at the Heather and had been deprived of their surplus. Most of them required nothing, but when supplied with sugar abdominal distension seldom appears.

QUANTITY OF HONEY.

Each hive gave us 22 lbs. of drained honey, 1 lb. of wax, and four bottles of mead. This season, owing to the mildness of the weather, our mead stood only twelve hours until fermentation was visible, and at the end of twenty-four hours active; the cask was kept filled for other three days, and then bunged closely up. At the end of from eight to twelve months it will have fermented gradually and thoroughly, and will be bottled off. A sample of 1887 mead was sent to a chemist, who said "that it was superior to nine-tenths of wines imported into this country, containing just sufficient alcohol as a safe stimulant and refreshing beverage."—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

Little & Ballantyne, Carlisle.—*Catalogue of Trees and Shrubs.*
Gilbert Davidson, Ammanford, South Wales.—*List of Selected Fancy Pansies, 1890.*



* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Pears and Apples (W. S. E.).—If you desire a very large Pear that is not in your list you may plant Pitmaston Duchess. It is not of high quality, but one of the most profitable for market. A grower of a few tons this year sold the fruits for 4d. to 6d. each. Maréchal de Cour, Emile d'Heyst, Glou Morceau, and the very late Olivier des Serres are

THE BEE-KEEPER.

APIARIAN NOTES.

PREPARING SYRUP.

SEVERAL correspondents "have been bothered by their bees not taking the syrup supplied to them; they get messed with it, and being unable to fly, creep out of the hive and die." Feeding bees

good varieties not in your list. Of dessert Apples you do not appear to have Cox's Orange Pippin, Claygate Pearmain, or Braddick's Nonpareil, which are all good for winter use. Of culinary Apples you may add Small's Admirable, Bramley's Seedling, and New Northern Greening. The fruit you send is, we think, Warner's King, though it is not named in your list.

Figs—Pears (*F. Smith*).—Your question about the Figs cannot be answered from an examination of the leaves alone. Restrict the root action of the trees to expedite their bearing, then send us fruit and foliage as well. They would probably bear the sooner if grown in pots. Easter Beurré is an uncertain Pear, succeeding well in some localities and not in others. If it bears and ripens well in your district you may safely plant it. Bergamotte Esperen and Olivier des Serres are good late Pears. The most profitable example of Pear culture we have seen this year was in the form of large freely grown open bushes of Pitmas-ton Duchess on the Pear stock. The handsome fruits, of which there were a few tons, were sold in Covent Garden at from 4s. to 6s. a dozen. Trees of the same variety planted at the same time on Quince stocks were practically worthless.

Culture of Cassia corymbosa (*C. D. R.*).—The plant of which you sent a spray is a native of Buenos Ayres, and was introduced to this country at the close of the last century. It is a member of the natural order Leguminosæ, and bears the name given above. It succeeds well in a greenhouse or other cool house, and also does well out of doors in the summer; but it is not hardy, and it would not be safe in a border during the winter unless the situation is very warm and sheltered. A compost of turfy loam, a little well-decayed manure, leaf soil, and sand meet its requirements; but it will grow fairly well in almost any ordinary garden soil. Your plant is in excellent health, the foliage being remarkably vigorous. The best plan would be to transfer it to a conservatory, where it could be trained to a wall, pillar, or roof.

Potting Lilliums (*S. T.*).—A compost of two-thirds of turfy loam and one-third of turfy peat with sufficient sand and crushed charcoal to keep the soil porous will be suitable. The bulbs may be potted now, surrounding them with sand, and covering them an inch or more deep. If you place them at once in the pots in which they are intended to flower the pots should not be quite filled with soil, but space should be allowed for top dressings. If the pots can be buried in moist cocoa-nut fibre refuse or ashes there will be less danger of the bulbs being injured by mistakes in watering. A cold frame or the floor of a greenhouse will be suitable for accommodating the pots until the plants commence growing, when they must have a light position and abundance of air. They thrive well plunged in ashes in the open air in summer—better indeed than in a greenhouse, unless the structure is very light.

Myrsiphyllum asparagoides (*M. T.*).—It is a useful, easily grown plant, and one of our correspondents especially commends it for covering the back walls of vineries. He says:—"I planted it along the back wall of a vinery here last season, and trained it up by simply tying small strings to the bottom and top wires. The shoots soon took to these, and no more attention was required in the way of training. It is astonishing how closely the shoots keep twining themselves round the string, though resting against the intermediate wires. In no case did a shoot get behind a wire or twist itself round one, so that I cut any number of shoots up to 11 feet in length beautifully covered from top to bottom with its glossy foliage. The strings can be easily drawn out when the shoot is cut. These long sprays are simply invaluable in table decoration, as they can be twisted about in any form desired. I am just now preparing sufficient plants for five or six other houses in the same way. The plant is easily raised from seed. After it is established it keeps throwing up young shoots year after year. I cut twenty dozens of those long sprays during the Christmas week. Anyone who has much house and table decoration to do can easily understand what the value of those would be at such a time."

Manure for Orchids (*O. R. N.*).—The following, which describes the experience of an old Orchid grower, will answer your question. It is no new thing to use manure in the compost for terrestrial Orchids. It has been recommended and practised in gardens for many years and with the best results for Calanthes, Bletias, Phajus, Cypripediums, and others. Cow manure carefully prepared and added to the compost is a decided advantage with such plants as Cypripediums of a strong growing nature. It is best to use it near the surface, so that at the end of each season any that remains can be readily removed. Manure in a liquid state, made from steeping cow manure in water, has been repeatedly given to these plants with the most beneficial results. Soot water in a clear state is stimulating also. A bag of soot steeped in a tank with cow manure and used in a weak state is a splendid stimulant. We have tried its effects, not only on Calanthes, Bletias, and Phajus, but frequently on Cypripedium insigne. With the latter, plants as nearly equal in all respects as possible were selected, and some watered with the liquid during the season of growth, and the others with pure water only. The stimulant had the effect of producing finer growth of a deeper colour and larger flowers. The liquid is also good for Cælogynes, Lycastes, and strong-growing Zygopetalums. Suitable artificial manures might also be beneficial to these plants. Some have been tried, but the manure and solution referred to were preferred. Artificial manures are not used in the compost for epiphytal Orchids. A weak liquid from cow manure syringed amongst the pots and about the floors of the house, to be evaporated and taken up by the plants from the atmosphere. Use manure and liquid most cautiously. When we look at the excellent results attained by good culture without manure or liquid in the case of

epiphytal Orchids we have grave doubts of any improvement to warrant the risk. In some cases, Dendrobiums for instance, larger pseudo-bulbs and foliage may have resulted, but whether this is an advantage remains to be proved. It is wise to experiment in this matter, for by so doing only can reliable knowledge be obtained. But before the practice is taken up generally it is necessary to know whether strong growths and bold foliage made under pressure by the aid of forcing artificials are likely to prolong or shorten the life of the plant.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*H. J. Williams*).—The Apple is Reinette de Canada. "Botany for Beginners," by Dr. Masters, will suit you. (*W. E. X.*).—We believe the Apple to be the old Foxwhelp, a noted Herefordshire Cider Apple. (*Thomas Hine*).—1, Comte de Lamy Pear; 2, Ribston Pippin; 3, Northern Greening; 4, Fearn's Pippin; 5, Benoni; 6, Court Pendu Plat. (*R. C. Appleton*).—1, Beurré Capiaumont; 2, Duchesse d'Angoulême; 3, Beurré Diel. (*F. Jellico*).—Verulam. The cracking is due to the soil. Is it light and sandy?

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*J. H. York*).—The box was received, but as you had not secured the numbers to the specimens enclosed we cannot name them so that you could recognise them. (*B.*).—1, Adiantum trapeziforme; 2, Adiantum cuneatum; 3, Adiantum macrophyllum.

COVENT GARDEN MARKET.—NOVEMBER 12TH.

MARKET quiet with good supplies. Prices unaltered.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, $\frac{1}{2}$ sieve	1	6	to	2	6	Lemons, case	35	0	to 45 0
" Nova Scotia and						Melons, each	1	0	2 0
" Canada, per barrel	15	0	26	0		Oranges, per 100	4	0	9 0
" Tasmanian, p. case	0	0	0	0		Peaches, dozen	3	0	12 0
Grapes, per lb.	0	9	3	0		Plums, $\frac{1}{2}$ sieve	4	0	9 0
Kentish Filberts, 100 lbs.	0	0	0	0		St. Michael Pines, each..	2	0	6 0
" Cobs	70	0	75	0		Strawberries, per lb. ..	0	0	0 0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes, dozen	0	0	to	0	0	Mushrooms, punnet ..	1	6	to 2 0
Asparagus, bundle	0	0	0	0		Mustard & Cress, punnet	0	2	0 0
Beans, Kidney, per lb. ..	0	3	0	0		Onions, bushel	3	0	4 0
Beet, Red, dozen	1	0	0	0		Parsley, dozen bunches	2	0	3 0
Brussels Sprouts, $\frac{1}{2}$ sieve	1	9	2	0		Parsnips, dozen	1	0	0 0
Cabbage, dozen	1	6	0	0		Potatoes, per cwt.	3	0	4 0
Carrots, bunch	0	4	0	0		" New, per lb.	0	0	0 0
Cauliflowers, dozen	2	0	4	0		Rhubarb, bundle	0	2	0 0
Celery, bundle	1	0	1	3		Salsafy, bundle	1	0	1 6
Coleworts, doz. bunches	2	0	4	0		Scorzonera, bundle	1	6	0 0
Cucumbers, doz.	2	0	3	6		Seakale, per bkt.	2	0	2 6
Endive, dozen	1	0	0	0		Shallots, per lb.	0	3	0 0
Herbs, bunch	0	2	0	0		Spinach, bushel	1	0	2 0
Leeks, bunch	0	2	0	0		Tomatoes, per lb.	0	4	0 6
Lettuce, dozen	0	9	1	3		Turnips, bunch	0	0	0 4

CUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	4	0	to	8	0	Mimosa (Fench.), per bch.	0	9	to 1 0
Asters, per bunch, French	0	0	0	0		Narciss (Paper-white),			
" English, 12 bunches	4	0	9	0		French, doz. bunches ..	4	0	10 0
Bouvardias, bunch	0	6	1	0		Do. Do. English,			
Carnations, 12 bunches ..	6	0	9	0		per bunch	1	6	2 0
" 12 bunches	1	0	2	0		Pelargoniums, 12 trusses	0	9	1 0
Chrysanthemum, 12 blms.	1	0	3	0		" scarlet, 12 bunches	4	0	6 0
" 12 bunches	4	0	12	0		Pinks (various), doz. bchs.	0	0	0 0
Eucharis, dozen	3	0	6	0		Primula (double) 12 sprays	0	6	1 0
Gardenias, 12 blooms ..	4	0	6	0		Roses (indoor), dozen ..	0	6	1 6
Gypsophila, per bunch ..	0	0	0	0		" Red, 12 blooms ..	1	0	2 0
Lapageria, 12 blooms ..	2	0	4	0		" Tea, white, dozen ..	0	6	2 0
Lavender, dozen bunches	0	0	0	0		" Yellow	3	0	5 0
Lilac (French) per bunch	5	0	7	6		Stocks, dozen bunches ..	0	0	0 0
Lilium, various, 12 blms.	0	0	0	0		Sweet Peas, 12 bunches	0	0	0 0
" longiflorum, 12 blms.	4	0	6	0		Tuberose, 12 blooms ..	0	4	0 9
Maidenhair Fern, dozen						Violets (Parks)	2	6	3 6
bunches	4	0	9	0		" (dark)	1	0	2 0
Marguerites, 12 bunches	2	0	6	0		" (English), doz. bunch	1	0	2 0
Mignonette, 12 bunches ..	2	0	4	0		Wallflower, doz. bunches	3	0	6 0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Aralia Sieboldi, dozen ..	6	0	to	12	0	Geraniums Scarlet, p. doz.	2	0	to 6 0
Arbor Vitæ (golden) doz.	6	0	8	0		Heliotrope, per doz. ..	4	0	6 0
Asters, dozen pots	0	0	0	0		Hydrangea, doz. pots ..	9	0	18 0
Calceolaria, per doz. ..	0	0	0	0		Lilium lancifolium, doz.	0	0	0 0
Chrysanthemum, per doz.	6	0	24	0		" longiflorum, doz. ..	0	0	0 0
Climbing Plants, various,						Lily of the Valley, 12 pots	0	0	0 0
dozen pots	4	0	9	0		Lobelia, per doz.	0	0	0 0
Dracæna terminalis, doz.	24	0	42	0		Marguerite Daisy, dozen	6	0	12 0
" viridis, dozen	12	0	24	0		Mignonette, per dozen ..	4	0	6 0
Erica, Cavendishi, per pt.	0	0	0	0		Musk, per dozen	0	0	0 0
" various, dozen	12	0	18	0		Myrtles, dozen	6	0	12 0
Euonymus, var., dozen ..	6	0	18	0		Nasturtiums, dozen pots	0	0	0 0
Evergreens, in var., dozen	6	0	24	0		Palms, in var., each ..	2	6	21 0
Ferns, in variety, dozen ..	4	0	18	0		Pelargoniums, per doz. ..	0	0	0 0
Ficus elastica, each ..	1	6	7	0		Rhodanthe, per dozen ..	0	0	0 0
Foliage plants, var., each	2	0	10	0		Stocks, per doz.	0	0	0 0
Fuchsia, per doz.	0	0	0	0		Tropeolums, various, per			
Geraniums, Ivy, per doz.	0	0	0	0		dozen	0	0	0 0



SEWAGE.

To the very natural inquiry, What have the managers of home farms to do with sewage? we answer that many a home farm might derive much benefit from the homestead drainage, as well as from that of the landlord's house. The matter is very simple, and is thus managed:—Construct cisterns at farm and mansion in such a position that no offensive odours can reach any part of the premises or the approaches to them. Procure a couple of pumps from the Bon Accord Works, Aberdeen, which cost from 30s. to 50s., the latter being a 3-inch pump admirably adapted to the work, and distribute the sewage of both places over any of the grass land. Do this persistently, and you will have ample reason to thank us for the hint. Or try the sewage upon Rye Grass or Maize, and realise something of the marvellous crops obtained by this means at the Croydon sewage farm. Every application of the sewage must be a thorough soaking, and not a mere surface wetting, for most sewage is so much diluted with water that its fertilising powers are low, and it is only by a liberal use of it that real good is done to the crops upon which it is used.

Sewage contains all the essential elements of plant food, and therefore we have only to use enough of it to ensure good results. It is most suitable for growing crops, and at this season of the year its use is confined to old pastures where it is certain to be turned to good account, and our especial motive in calling attention to its value now is that advantage may be taken of this quiet period of the year to make provision for its storage and accumulation for another season. Where works exist for the precipitation of sewage the sludge may of course be carted upon the land as it can be had, using 8 or 10 tons of it upon the space of land for which a hundred-weight of pure nitrogenous and mineral manure is sufficient. Let any companies which may be formed for the sale of precipitated sewage in any form remember this, and they will find that until a method is discovered to concentrate the fertiliser very much more than has been done in any of the samples sent to us for trial it will not answer to send it any distance by rail.

That the present waste of the sewage of most large towns is a shame and scandal there can be no doubt, and the Board of Agriculture would, indeed, be doing good work in trying to grapple with this evil. If it requires precedent and data upon which to base action it need not be at a loss. In this country Croydon has shown fully what can be done with the sewage of a large town, and its example has been followed by a few other towns. But London, with its 150 million gallons flowing daily into the Thames at Barking and Crossness, is content to continue the pollution of the Thames, while the poor land in Essex has fallen so much in value that plenty of it has been on sale at £10 and £12 per acre. In every discussion of this enormous waste of a valuable fertiliser some part of this land is pointed out as in a most suitable position for taking the London sewage. A trial farm has been suggested, but we submit that it would prove a mere waste of time when the thing is an accomplished fact. Berlin, with its sewage farms of 19,000 acres in extent, affords a striking example of what is possible on a large scale in this direction. There are 2000 hands constantly employed upon the sewage land, and the crops are highly satisfactory. There is a movement in France in the same wise direction, which at present is confined to a more limited area. Its extension is certain among so thrifty a people as the French, for the fact is before them of the land at Gennevilliers under sewage yielding crops worth from £60 to £160 per acre. It would, of course, be a gigantic business to turn the London sewage to account in this way; but it is certain to be done sooner or later, and it will

then probably be utilised partly as sludge and partly in its crude state where the land is suitable for it.

The quantity of sludge we mention as requisite to produce full crops should be taken as a guide to price. So far as our experience goes the price asked hitherto for precipitated sewage has been altogether prohibitive to farmers at a distance from the works. Those who have ventured to purchase some, and have sent samples for analysis to Dr. Vöelcker, have been told that its fertilising power was so low that it could only answer for use upon farms to which it could be carted direct, and not when sent to a distance by rail. The only really profitable use of sewage up to the present time has been as we have explained, and upon sewage farms by irrigation. At a recent conference on this subject, held at St. James's Hall, Colonel Jones of Wrexham told how he had half a million gallons of sewage flowing on his farm of 19 acres night and day, and it was so profitable that he was able to pay a rent, inclusive of taxes and tithes, of £5 an acre. This farm gained a prize of £100 in 1879 as the best sewage farm, and the trial of sewage irrigation upon it has been long and thorough.

WORK ON THE HOME FARM.

Now that the land cleaning and corn sowing is pretty well over, many of the farming implements are being laid aside for some time. Preparatory to this they should be thoroughly overhauled, cleaned, oiled, and painted, and all necessary repairs done. Duplicate parts in stock should be looked up, and a thorough stock-taking gone through and checked off upon the inventory. It is a good rule always to have repairs done at this season of the year, so as to have the tools in readiness for use when the busy time come round again; not only is this ensured and much time saved when it is most valuable, but everything is kept in good order and premature decay prevented.

Since writing our last work note we have been over a large home farm in Northamptonshire, where we found the store cattle still out upon the pastures. Feed was plentiful enough, and the cattle were lusty and thriving, and we could not but deplore the total absence of shelter of any sort for them. Exposure to cold and wet always causes a falling off in condition, and often brings disease among cattle. Really, to see valuable beasts left out in the open in all weather, one would suppose the owner had never heard of bronchitis, pneumonia, and pleurisy among cattle, or abortion among cows. In Leicestershire, where cattle are so much exposed, losses from hoose, or catarrh, are common, especially among young stock. It must be owned, too, that there are losses from the same cause among cattle in yards, especially where they are much crowded. Hardly ever are the younger or weak beasts allowed to eat their food in peace, for they are driven by the stronger ones out of the lodges, and away from the racks, till they become so reduced by cold, wet, and hunger as to become easy victims to hoose, all which might be avoided by an adequate provision of shelter and a careful separation of the beasts.

Another important point requiring special attention now is the daily clearance of all foul litter from every shed and lodge. See to this, and that the animals always have a comfortable bed of fresh dry litter upon a clean hard floor. Foul bedding and close overheated cowhouses are both causes of disease. Wholesome food, pure air and water, plenty of fresh litter, with shelter from rain and cold cutting winds, are the essentials now, and with careful supervision they go far to insure immunity from disease, and the maintenance of that lusty condition, without which early maturity and profitable results cannot be had.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain
1890. November.	Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min.	In sun.	On grass.		
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In		
Sunday	2	29.239	53.9	53.8	S.W.	47.0	54.9	42.2	73.8	35.3	0.043
Monday	3	29.679	41.0	33.9	S.W.	46.9	49.9	37.6	64.6	31.4	0.082
Tuesday	4	29.299	46.4	44.6	S.W.	43.2	52.6	41.1	80.4	37.9	0.097
Wednesday ..	5	29.539	41.8	40.6	N.	43.0	50.4	40.3	80.7	31.6	
Thursday	6	29.623	28.3	38.0	S.W.	45.3	50.3	35.5	68.1	18.4	0.333
Friday	7	29.143	47.6	43.2	S.W.	45.9	50.3	37.9	64.6	35.0	0.113
Saturday	8	29.651	38.9	37.3	W.	44.9	52.4	36.1	75.1	29.4	0.039
		29.481	44.0	42.3		45.9	51.5	38.7	72.5	32.7	0.738

REMARKS.

- 2nd.—Wet from 6 A.M. to 11 A.M., and a shower at 2 P.M.; the afternoon generally fine, with some sunshine.
 3rd.—Brilliant early; generally overcast after 10 A.M.; rain in the evening.
 4th.—Cloudy early; bright sunshine from 10 A.M. to sunset; spots of rain about 5 P.M.; fair night.
 5th.—Wet from 1 A.M. to 5 A.M.; almost cloudless from 9 A.M.
 6th.—Slightly foggy early; sunshine all day; gale and rain in evening and night.
 7th.—Overcast and squally in morning; gale, with showers, in afternoon; wet evening.
 8th.—Brilliant early; a little fog in morning; bright from 11 A.M. to sunset.
 Cloudy, with occasional bright sun; frequent rain, chiefly at night; temperature near the average.—G. J. SYMONS.



AFTER travelling 900 miles on behalf of the Chrysanthemum, and adjudicating upon upwards of 5000 blooms, it may be readily imagined that it was a pleasant relief last Saturday to turn aside for a few hours to another favourite flower—the Carnation. To my friend, Mr. Harry Turner of Slough, I owe the opportunity of inspecting a wonderful collection of Carnations at Ascott, near Leighton Buzzard, the residence of Leopold de Rothschild, Esq., whose courtesy, with the kind attention of his excellent gardener, Mr. Jennings, rendered my hurried visit most agreeable.

Much could be written respecting Ascott and its garden, and a long description would be needed to do full justice to such an establishment. It is beautifully situated on a considerable elevation overlooking the Vale of Aylesbury with stately Mentmore and the Chiltern Hills in the distance, while the garden has been designed and planted with most commendable taste. A November day, even with a bright sun lighting up the landscape, is not, however, the most suitable time for appreciating the attractions of such a scene, and the pleasure of another visit is therefore reserved. In the present notes attention will be confined to the chief object of my visit—the Carnations.

Conversing with an experienced cultivator and thorough florist of the modern school a few days since “dressing,” as applied to flowers for exhibition, became the subject, and my friend, who holds strong opinions upon the point, expressed himself somewhat in the following terms:—“The florists’ or exhibition Carnations are being killed in popular estimation by the excessive artificiality with which they are displayed at shows. The incurved Chrysanthemums, for which this preparation is deemed essential, are being gradually ousted by the Japanese varieties that do not need it; and even the Rose is suffering from the same cause, and the public are turning to the old garden Roses for natural grace of form and usefulness.” There is a large measure of truth in these remarks, and especially as applied to the Carnation. For example, take the increasing popularity of the so-called border varieties, which do not possess sufficient symmetry of form to satisfy the more exacting florists, and yet are highly valued in gardens where bright fragrant flowers are required by basketfuls. Then, too, there is another section of Carnations, comprising some of the most useful in cultivation—namely, the tree, winter, and spring-flowering varieties for culture under glass, which are advancing in public favour, as they well deserve. These flowers can be had in such numbers, over so long a period when they are sure to be most in request, and the expense and trouble incurred in their production are of a much more moderate character than many other plants demand at that time of year.

At Ascott the great feature at the present time is a houseful of the well known beautiful variety Miss Joliffe, and as a floricultural display and example of cultural success this is remarkable in the highest degree. About 1500 plants are grown, two-thirds of which are now in the house, and as the plants bear from fifty to sixty fine flowers each there is a total exceeding 50,000 fully open or expanding. The effect produced by such large numbers of delicately tinted, elegant, but not too rigidly symmetrical flowers in combination with healthy foliage is charming in the extreme, and we have in addition the exquisite fragrance, not too powerful for the most sensitive in these matters. The sterling usefulness of

such Carnations as these is apparent at a glance. The plants themselves can be employed for any form of decoration, in groups, on tables, or elsewhere, and the flowers are equally well adapted for vases, stands, bouquets, buttonholes, baskets, or indeed for any of the almost innumerable purposes to which flowers are now applied. It is not merely a case of growing flowers as a hobby or to gratify fantastic desires, but they perform a substantial service that must be appreciated in any garden at this time of year.

The house in which the plants are growing is a handsome, well-constructed, substantial span-roofed erection in Messrs. Foster and Pearson’s best style. It is 70 feet long in two divisions, 18 feet wide, and about 18 feet high to the lantern, with neat central and side stages of iron, and it is provided with a simple but efficient system of ventilation in the roof also above and below the stages. The latter is a very important matter, as Carnations at all times require plenty of air, and yet cold draughts are most injurious, causing a check that the best after-treatment can seldom overcome entirely. For the admission of air in severe weather the ventilators beneath the stages are covered inside with thin perforated metal plates, so placed that the current of air strikes directly upon the hot-water pipes, and is thus slightly warmed before reaching the plants. This may seem a small matter, but success depends largely upon the details in all departments of industry, and especially in horticulture. In fine weather air is admitted as freely as possible, an even temperature of about 55° being maintained from now onwards. Higher temperatures and a moist atmosphere seem to suit Carnations of this class, inducing a rapid growth; but the results are often disastrous when this treatment is adopted, as I have seen in many cases. The plants really become weakened, the flowers are small, wanting in substance, and of less duration than when developed under cooler and more airy conditions. The paths are formed of iron gratings, beneath which is a layer of clean shingle, the same material being employed upon the stages and beneath the pipes. Near the edge of the paths a narrow border is formed and planted with small Ferns, all these arrangements helping to preserve a sweet atmosphere, exactly what the Carnation requires.

An outline of the system so successfully adopted by Mr. J. Jennings will no doubt be interesting and useful to some readers, and it can be compressed into a few words. In the first place cuttings are inserted during February in light sandy soil, the pots being plunged in slight heat. When rooted the young plants are transferred to small or large 60-pots, according to their size, and when sufficiently advanced placed into 48’s, and subsequently into 32’s or 24’s, regard being paid to the strength of the plants and the condition of their roots. They are first removed to frames outside, and in June are plunged in ashes out of doors in an open but not too exposed position, where they remain until September in ordinary seasons, or later, according to the weather, when they are placed in the house where they are to flower. A good turfy loam is used as the basis of the soil, with sufficient sand to insure good drainage and avoid stagnation at the roots, a fatal condition. Very little manure is employed, but some of the advertised artificial preparations have been found advantageous in small quantities, though it would be invidious to mention them here, but one simple fertiliser has been proved to be of great service—namely, soot, and though this is not new to cultivators, its value is often ignored.

The earliest plants commence flowering in October, and a succession is obtained until February or March. Some are cut in then to make fresh growth and produce a fresh supply of flowers, and these are often followed by another crop, so that three distinct supplies are usually had from one series of plants in a year. Old plants are, however, either placed out in beds or thrown away, fresh stock being raised every year as young vigorous plants give the best return. The smaller flower buds are removed freely, and this throws much additional strength into those retained, and they are found to last longer. In the new house these Carnations have not a sign of mildew, and aphides are not tolerated, the fine healthy

condition of the plants plainly showing how well they are attended in all respects.

The preceding remarks apply more especially to the variety already named (Miss Joliffe), which has now been before the public for nineteen years, as the Royal Horticultural Society awarded Mr. Masters a first-class certificate for it in 1871; they are, however, equally applicable to other varieties grown for winter flowering. Of these a good general collection is grown at Ascott, including all the best varieties in cultivation, and amongst the newer forms is one that appears to be of a most promising character—this is named Winter Cheer, and was sent out by Messrs. J. Veitch & Sons. It possesses very rich deep red flowers, is of good habit, similarly floriferous to Miss Joliffe, and as the plants become stronger it is likely to make a first-rate companion for that variety. The present time is not the best for seeing the *Souvenir de la Malmaison*, though some plants are bearing grand flowers; but it can be imagined what a display 3000 bushy specimens would produce. The various forms of this type are all grown. Princess of Wales, Lady Middleton, the crimson, the rose, and the old form are included. Madame Warocqué is there much finer, richer in colour, and more satisfactory than I have yet seen it, and is evidently worth a place in collections.

Concerning the brilliant Zonal Pelargoniums, the plentiful stock of Roses, and the attractions of the garden generally something will be said on another occasion, and with this promise I must conclude my notes for the present week.—LEWIS CASTLE.

RENOVATING ORCHARDS.

[A Paper by Mr. JOHN WRIGHT, read on behalf of the British Fruit Growers' Association, at a meeting of the Falmouth Horticultural Society, November 12th, 1890.]

I HAVE pleasure in complying with the wish of the Secretary of the British Fruit Growers' Association in writing a paper on the subject in question in the hope of its being of service to those for whom it is intended.

There are no doubt thousands of orchard fruit trees, not only in the kingdom, but almost in every county, which are little less than cumberers of the ground. Some of these trees cannot be profitably restored, but unquestionably many of them may be materially improved.

The one great fundamental error which appears to have taken possession of the minds of the majority of men who have planted orchards is in apparently supposing that the trees would go on growing and bearing good fruit year after year, from generation to generation, without the soil having restored to it such mineral constituents as have been abstracted from it by the wood, leaves, and fruit of preceding years. It is well known and recognised that all crops of a much more ephemeral character than fruiting trees cannot be reproduced on the same ground year after year without returning to the soil in the form of manure the constituents removed by those crops, or in so arranging successional crops in farms and gardens that require in the main either different foods, or at least widely differing proportions of the same kinds. All farmers know that they cannot obtain even half crops of grain, Clover, or roots from the same field for half a generation if they put nothing into it; and it is the same with garden crops. They can only be produced year after year in a satisfactory manner when the ingredients necessary for their production are in the soil.

Everything that grows in the vegetable, as well as in the animal kingdom, needs appropriate food, and just in proportion as the supply fails in the same proportion is the debility of animal, plant, or tree manifested. The same principle governs all. Food is the motive power in the growth and productiveness of fruit trees, and is as essential to them as heat is as supplied by coal for the generation of steam to enable our engines to do the work for which they are intended. And not only must the supply of fuel be adequate for the object in view, but the machinery must be kept in clean, smooth, free-working order, or the fuel would be wasted. It is the same with fruit trees. The parts above ground must be clean, the branches bright and clear, the leaves stout by direct exposure to light and air, or whatever food there may be in the soil for the roots to imbibe will avail little in the production of fruit. This is plainly seen in the case of young trees growing in over-rich soil, and where the knife is freely used in cutting back the luxuriant growths yearly. They become mere thickets of sappy growths and flabby leaves, few or no blossom buds forming. This is mentioned for showing the necessity of light and air acting directly on the foliage of fruit trees for maintaining them in a healthy fruit-

ful state. Good leaves, thick in texture, deep green in colour, and clean, are manufacturers of fruit. They are the machinery, so to say, of trees, but differ from mechanical productions, inasmuch as they are formed in a large measure of matter supplied by the roots. Produce good leaves by good food from the soil, and full exposure to the air for breathing and benefiting by the atmospherical gasses, then will the trees be healthy and productive.

Now let us turn to orchard trees that need renovation. The first question that naturally arises is this, What is the cause of their unsatisfactory condition? It is only when the cause of an evil is determined that the best remedy can be directly applied. After what has been said on the necessity for adding fertility to the soil for annual or biennial crops, it will be seen how utterly impossible it is for trees that have been draining the soil of its virtues for half a century more or less to be otherwise than in a debilitated state. They are struggling for existence in famine-stricken soil. The fruit they produce is small, hard, juiceless, or more notorious for core, kernels, and skin than for thick, tender flesh and the red or rosy flush on the clear and speckless cheek. These are the fruits that are so much coveted, and they can only be produced by good sustenance or an adequate supply of suitable, well-digested food. If the fruit food, which consists mainly of lime, potash, phosphorus, and soda, is in the soil with sufficient moisture the roots will imbibe it in solution and good leaves digest it, then there can only be one result—healthier growth and better fruit, and it may be as good as the variety is capable of producing.

Some orchards are unproductive through the roots having passed deep down into water-logged soil. They first seized the food that was nearest, then sought for more further afield so to say, just as sheep do in pastures; but if they get into a bog they perish. Water is the first necessity of fruit trees, but if it is stagnant it is the reverse of nourishing, and may even be poisonous, the effects of this being seen in the form of gangrenous swellings, canker, gum, mildew, and a horde of insects that find suitable conditions in which to thrive. Orchards that are failing through the roots of the trees being in a quagmire can seldom be restored to health, and the only way of improving them is by fresh soil and manure placed in actual contact with the upper roots, from which new rootlets may be tempted to form, as they will when surrounded with a suitable medium. It is better to plant new orchards than to spend much money in the form of labour and material on old under those circumstances. Those who have established or inherited such orchards are now paying the penalty of the mistake that was made of planting the trees in the wrong places, or for not having kept the roots near the surface by periodical applications of food. In years of long ago any site appeared to be thought good enough for an orchard, and trees seem to have been planted in places that were too wet for growing Potatoes. We can only hope that the errors of the past may be taken as lessons that will teach the present generation wisdom in the cultivation of fruit. When an orchard is in a low wet site that cannot be drained perhaps the best thing to do is to plant it with Osiers. These give a fair return, draw much water out of the land, and the myriads of leaves that fall from them gradually enrich the surface soil and encourage the production of fibrous roots there, which never fail to benefit fruit trees. Osiers established in extensive orchards where the land is wet realise sufficient for paying a good rent and something more, while the trees above them bear excellent crops of valuable fruit.

But where one acre of orchard fruit trees needs renovating through excessive wetness of site, twenty and more, probably fifty, if not a hundred, acres of trees have been rendered comparatively effete from an exactly opposite cause—namely, soil so dry and poor that there is little to be imbibed from it by the roots of the trees, and certainly not half so much as is needed for enabling them to yield even moderate crops of scarcely marketable fruit. In such case the trees, if not too old and canker-eaten, are amenable to improvement, and they may give, as many have given, a good return for the assistance that has been rendered than in feeding the roots and thinning and cleaning the branches, also by grafting better and free growing varieties on the inferior, for it should always be remembered that a tree of a bad variety takes up as much room as a good one, and, moreover, a tree that neither bears good fruit nor makes little beyond cankered growth, may be transformed into a healthy specimen and bear fine fruit by putting a new head on old shoulders in the form of a number of grafts of a strong growing hardy sort, always provided there is nutriment in the soil for the roots to appropriate. Strong growing Apples and other fruit trees established on weak stocks increase the root-action of those stocks, and if these can find the requisite support for the growths new layers of bark form on the old stems and a new lease of life is thus given to the trees.

(To be continued.)

DEATH OF MR. SHIRLEY HIBBERD.

DEATH has been busy in the ranks of horticulturists during the present year, but the announcement we have to make with the deepest regret this week will come as a painful surprise to a large number of our readers. Few of those who assembled at the

He appears to have been somewhat better the following day and on Saturday, but on Sunday morning he became rapidly worse and died in a few hours.

Our old friend and fellow worker was born in the year 1825 in what was then the rural village of Stepney—the son of an old sailor. In early life he was intended for a bookseller, but he soon



FIG. 59.—MR. SHIRLEY HIBBERD.

National Chrysanthemum Society's banquet on Thursday evening last, and who listened to Mr. Shirley Hibberd's eloquent speech, could have imagined that it was the last time his clear and ringing voice would be heard in public. It was, however, remarked that he seemed unwell, that he did not speak with his usual fluency, and that he left early in the evening; beyond this no one thought there was anything of a serious nature. It was said he had contracted a cold at the Chrysanthemum Conference held in one of the rooms at the Aquarium on Tuesday, but though feeling unwell he fulfilled his engagement at the banquet to the satisfaction of all present.

embarked upon a literary career, and contributed short essays and pieces of poetry to some of the periodicals which appeared during the mental and political ferment which followed the revolutionary period of 1848, 1849, and 1850. They display something of the originality and intellectual vigour which characterised him in after life. At the early age of twenty-five he became the editor of a weekly newspaper, and in this he published the essays he afterwards gave in the volume termed "Brambles and Byleaves." In these rural subjects were illustrated from a sentimental rather than from a practical point of view.

At this time Mr. Shirley Hibberd was a man of great versatility of character, taking part in meetings and lecturing on social and moral topics in many parts of the metropolis. It is said that he once went to Newcastle-on-Tyne and delivered a series of lectures in the room of a friend announced to deliver the same, but who was laid aside by illness. Having married, and taken up his residence at Pentonville, he commenced a series of experiments bearing upon urban gardening, seeking the truest principles upon which it could be successfully carried out, his wife sympathising with him in his work and assisting him in many ways. The experience so gained and his recorded observations on plant culture in the midst of houses formed a book on town gardening, the first edition of which appeared in 1855. Probably at this time he experienced something like a struggle for existence, for he appeared for a time as delivering descriptive lectures on the Crimean war in what was originally Wyld's *Globe* in Leicester Square, illustrating his narrative by references to pictures, and proving a most able and successful expositor.

From Pentonville he went to reside at Stoke Newington, and while there closely identified himself with practical horticulture, and entered upon a series of experiments, which led to advantageous results. He developed and warmly advocated the plunging system in garden decoration while resident for some twelve years in Lordship Terrace. This system provides for a display all the year round by cultivating in pots certain plants and plunging them in the soil in their pots, arranging them in groups or otherwise, according to the fancy of the operator, but removing some and replacing them by others, according to the season of the year or the effect sought to be produced. Ivies, Hollies, many evergreens, &c., were cultivated in pots for this purpose—indeed, anything likely to be useful was turned to account for pot culture. At that time there existed in the City of London a Central Horticultural Association, of which Mr. George Gordon, Mr. George Glenny, and others were active members, and at one of the meetings Mr. S. Hibberd produced a group of berry-bearing plants all grown in pots, and all prepared for grouping, which proved extremely interesting and instructive. While at Stoke Newington he started several gardens for experimental purposes, but had to relinquish them one by one as they were required for building purposes. Trials of Potatoes, Peas, and other vegetables were carried out by him, and the results of these appeared in various gardening publications. It was while at Stoke Newington that, with the help of systematic fertilisation and persistent selection, he succeeded in obtaining Hibberd's Prolific Vegetable Marrow.

Experiments in fruit culture also engaged his attention, and one of his chief fruit gardens afterwards became Oubridge's nursery. Here he pursued various systems of training, grafting, pruning, &c., and it was while there he obtained those practical results which became the substance of the fruit lecture he delivered before the Society of Arts in 1876. One result was that the excessive pruning of fruit trees was curtailed to a considerable extent. It was while at Stoke Newington that he commenced the raising of Zonal Pelargoniums, which was eventually succeeded to and carried on with so much success by the late Dr. Denny. He also took up Rose growing, and made many experiments; the results of his culture were afterwards published in his "Amateurs' Rose Book," and in the course of his practice he was led to discover the immense value of plants on their own roots.

He afterwards removed to a rural spot situate between Muswell Hill and Tottenham, and having a large sized garden at his command he developed his taste for Potato culture, and in the course of a series of trials discovered the value of the Magnum Bonum Potato which had been sent to him for trial by the late Mr. James Clark of Christchurch. He also originated the method of growing Watercresses in pans, and exhibited a number of them on one occasion at one of the meetings of the Royal Horticultural Society. Meanwhile he had issued various small works on several aspects of gardening intended principally for amateurs, which were afterwards gathered up into one complete work—the "Amateur's Flower Garden." About 1870 he published his book on "Beautiful Leaved Plants," and also on "Rustic Adornments for Homes of Taste;" and in 1872 appeared his valuable work on "The Ivy, its History and Uses." In order to obtain the material for this book he cultivated a large number of Ivies and made himself acquainted with collections grown by others, placing them in appropriate groups and carefully describing them.

In 1858 he became a contributor to, and subsequently the Editor of the "Floral World," an illustrated monthly publication, published by Groombridge & Son, and retired from it in 1875, and some little time after it ceased to exist. He became the Editor of the "Gardener's Weekly Magazine and Floricultural Cabinet." In 1865 this was enlarged, and became known as the "Gardener's Magazine," of which he remained Editor till the day of his death. On the completion of the twenty-first year of his

editorship in 1879 the proprietors invited the principal contributors to a dinner at the Albion in Aldersgate, and a suitable presentation was made to Mr. Hibberd by them.

He closely identified himself with many suburban horticultural societies, and was one of the principal promoters of the great Fruit and Flower Show held by the United Horticultural Society (which appears to have been formed a year or so previously) in the Guildhall of the City of London, on November 14th and 15th, 1865. Out of this grew the United Horticultural Provident and Benefit Society. From the first he was an energetic supporter of the various international Potato exhibitions held at the Alexandra Palace, and subsequently at the Crystal Palace. At the time of his death he was President of the National Auricula Society, and one of the Vice-Presidents of the National Carnation and Picotee Society, and his support was always forthcoming for any movement having for its object the promotion of the cultivation of florists' flowers. Mr. Hibberd invariably took part in the Conferences arranged by the Royal Horticultural Society; also in that promoted by the National Dublin Society, and he read a paper on the "Origin of the Florists' Chrysanthemum" at the Conference, held on August 11th, in connection with the Centenary festival of the National Chrysanthemum Society, of which he was a member. He was a member of the Floral Committee of the Royal Horticultural Society, and was seldom absent from its meetings. Mr. Hibberd was one of the Vice-Presidents of the British Fruit-Growers' Association, and in June of the present year delivered an exhaustive address on the history of Strawberries at the Westminster Conference. As a Judge at flower shows his services were in much request; and occasionally he would deliver a lecture in connection with some provincial exhibition. As an after dinner speaker at festive gatherings of horticulturists he was perhaps without a rival.

It is practically impossible to fill in all the details of his horticultural life, for they are voluminous. He will be greatly missed.

We are informed that the funeral will take place at Abney Park Cemetery on Saturday next, about three o'clock. The cortège will leave Priory Road, Kew, about noon, and the first part of the service will be read in All Saints' Church, Aden Grove, Stoke Newington.

IMPORTED ORCHIDS.

(Continued from page 398.)

ANSELLIA.—Provided Ansellias are collected at the proper season and are packed safely there will be no difficulty in establishing them. They may be potted as soon as convenient after they have arrived in crocks, peat, and sphagnum. They will require to be watered rather cautiously till they begin to make fresh roots, after which time they may be watered more liberally and removed to the warmest end of the stove.

CALANTHE.—Calanthes of the vestita type are so well known that nothing need be said here with regard to imported pseudo-bulbs, for they are propagated so readily in this country that they are not frequently imported now-a-days. This section of Calanthes is the most useful of any Orchids, Dendrobiums excepted; they are easily grown, and what makes them more valuable is that they flower at a time when choice flowers are scarce. Many gardeners imagine that they are difficult to cultivate and require some special treatment, but they grow well in any ordinary stove temperature provided they are favoured with a good light position during the season of growth.

CATLEYA.—These are often received in poor, and in some cases almost worthless condition. It sometimes happens that the collectors cannot always find them at the proper time, and are sometimes delayed in transit; the consequence is that the young growths are too far advanced. When this is the case they seldom do much good the first year; owing to the growths being made in total darkness they are very weak. After a short time it will soon be visible if they intend to grow or damp off. When the growths are in such a stage they may be greatly assisted by placing them in a very shady place for a few days, gradually introducing them to more light. The young growths will then gain strength provided there is not too much heat and moisture in the house, after which time they may be potted in a very light compost, using crocks or charcoal freely. Very little water will be required till they have fresh roots. When Cattleyas are received in good condition they are by no means difficult to establish.

CÆLOGYNE.—There are many species in this genus that are of no real value to the horticulturist. *C. cristata* may be regarded as the most handsome and useful; indeed, it is a plant that ought to be more extensively grown. This is not difficult to import, owing to the fact that it has large pseudo-bulbs. Even if they lose their leading growth they invariably break back from the second pseudo-

bulb, making rather small growths the first year. They may be potted as soon as convenient, keeping them rather cool and dry for a time.

CYPRIPEDIUM.—This is another useful genus and a general favourite with all. The common species, such as *C. insigne*, *C. barbatum*, and *C. venustum*, are very easily managed; the choicer kinds require a little more attention. I find that some of the species, such as *C. caudatum*, *C. Stonei*, and *C. villosum*, do well potted in crocks and a little moss till they commence growing, when they may be surfaced with moss and peat, watering them liberally as root action advances.—L. C.

(To be continued.)



THE following Papers were read at the National Chrysanthemum Society's Conference, November 11th and 13th last, at the Royal Aquarium, Westminster. An interesting Paper on "Chrysanthemums in Art," by Mr. Haité, is, however, crowded out for the present. Sir Edwin Saunders presided on the first day, and Sir Guyer Hunter on the second.

EXPERIMENTS IN CHRYSANTHEMUM CULTURE.

By Mr. H. BRISCOE-IRONSIDE.

THE text of my paper affords, as you will observe, considerable latitude, of which I propose to take full advantage. There exists amongst us a considerable divergence of opinion as to the cultivation of our favourite flower, and it seems to me that on this point we are never likely to agree fully. The varied conditions under which we work, such as those of aspect, soil, water, &c., must so considerably affect the growth as to render results, attributed to the culture, inconclusive; moreover, we adopt many and dissimilar methods, and nevertheless attain fairly equal achievements—one grower being successful one season, and his opponent the next. Hence, with the view of improving our plants we resort to experiments, and some of my own experiments in this direction I shall now have the honour of briefly describing.

I have pursued various systems of cultivating the Chrysanthemum, such as striking in cold and heated frames, and have obtained more satisfactory results when the cuttings have been struck in frames placed in a moderately heated glass house, and removed when rooted to cold frames. I have found deep pots preferable for blooming in, as better drainage can be secured, the plants are safer against saturation during heavy rains, and are more easily top-dressed.

Last year I experimented with fifty small plants flowered in 32-size pots. They were fed with various chemicals and manures, both singly and in combination. To express an opinion on the result is a most difficult task, as I found it impossible to adhere strictly to one chemical or one manure, except in the case of horse manure. I came to the conclusion, however, that half-a-dozen plants which were successively given liquid horse manure, soot water, Peruvian guano, and fish manure, and occasionally carbonate of ammonia, showed the most satisfactory results. I would here mention, more as a curious circumstance than of any practical importance, that in the case of two plants which had occasional waterings of dissolved sugar, greatly diluted, a portion of the sugar reappeared upon the foliage. This I collected and dried, and on tasting it I could detect no alteration. At the same time, the leaves on which the sugar appeared changed to a deep red, resembling in colour the foliage of an *Ampelopsis Veitchii* in autumn.

I particularly observed the effects of the following forms of ammonia given to plants—viz., sulphate, phosphate, nitrate, muriate, and carbonate, and it seemed to me that although the colour of the foliage was considerably deepened, especially by carbonate of ammonia, the blooms did not last so long, and the petals were not so crisp nor firm, a condition of things greatly militating against successful exhibition. The last result was most noticeable when the plants were liberally supplied with ammonia during the flowering period. I have found, however, when the buds are fixed, and rainy weather sets in, thus preventing the usual waterings for some time, that carbonate of ammonia, at the rate of an ounce to 3 gallons of water, giving half a pint of the mixture to each pot, has maintained a healthy tone in the foliage; nevertheless, at such a time, when the air is moist and the light limited, I venture to think that it is advisable to avoid as much as possible forcing the growth. The application of carbonate of ammonia produces an almost instantaneous result, which may be readily observed in the following manner:—A plant (say Golden Dragon), the foliage of which has a tendency to turn yellow, is selected, one or two leaves removed, and placed in water to keep fresh; carbonate of ammonia is now given to the plant, and the leaves thereon compared a few hours afterwards with those which were previously cut off, when there will be found a conspicuous difference in their colour.

My experience has not led me to consider top-dressings of dry manures advantageous, as it has seemed to me that the surface roots are

damaged thereby, and the manurial contents not evenly distributed. As witness of this I daresay that some of you have noticed that after top-dressings of artificial manures have been applied, and suckers immediately under the soil have become soft and pulpy, which in conjunction with the constant pinching of the suckers up to the blooming period has resulted in the formation of a compact, unnatural mass at the most vulnerable part of the plant. I suspect this is a cause for a scarcity of root cuttings later on. We are doubtless all alive to the fact that it is advisable to feed moderately plants having small and thin leaves, and that is a safe guide to generally consider all such plants as belonging to the category of weak varieties. I have observed that the life of the leaves of this section when fully exposed to the sun's rays has been of comparatively short duration, and that the blooms have been considerably improved when these plants have been placed in a partially shaded position.

Continually watching the foliage has been the most useful guide to me in the cultivation of the Chrysanthemum. We know that when the cuttings are rooted a yellow appearance invariably denotes insufficient pot room, and after the plants have been finally potted that a similar condition betokens insufficient nourishment; also that when the midrib of the leaves becomes contracted and the foliage curls a too generous treatment has probably been the cause. This last feature I have frequently observed in cut-back plants, which, as might be expected, will not stand the same amount of feeding as those naturally grown.

One of the most difficult problems in the culture of the Chrysanthemum, and that which requires a vast amount of experience, is, I suppose, "the timing of the blooms" for exhibition. The following system has enabled me to exhibit blooms in fairly fresh condition three, and in some cases four, weeks after they have fully developed. Take a plant, the flowers on which are three-fourths expanded, remove it to a dark room or shed, and when a bloom has fully opened cut it off with, say, about 18 inches of stem; immerse immediately in a jar or tumbler of water, and cut off underneath the water about 2 inches of the stem. I imagine that in this way the air is prevented from penetrating the stem, and hence the access of the water to the bloom is unimpeded. A small quantity of charcoal placed in the water obviates the necessity of continually changing the same. I should mention that I afterwards take off a small piece of the stem occasionally, this operation being likewise performed underneath the water.

With regard to mildew, I have found that sulphide of potassium, at the rate of two ounces to a gallon of water, syringed on the plants, has been the most effectual remedy, but when housed I consider dry flowers of sulphur dusted on the foliage preferable. Mildew generally begins during the months of August and September, sometimes in the latter part of July, and I have reasons for concluding that it originates from the varying temperatures for which these months are conspicuous, the days frequently being extremely hot and the nights cold and misty. To confirm, in my own mind, my conjecture on this point, I housed half the plants of Val d'Andorre, Triomphe de la Rue des Châlets, Meg Merrilies, and Mr. Ralph Brocklebank, which are notoriously subject to this disease, at the end of July, the other half being housed at the end of September. No trace of mildew appeared on those first housed, while the others suffered in the usual manner. It will be found on taking two leaves of equal length (they can of course be cut to weigh the same), the one being healthy and the other showing signs of mildew, and burning them separately, that the ash of the former is heavy. This, I imagine, proves that the mildewed leaf contained more liquid matter than the other. It is not inconsistent, therefore, to conclude that defective or checked transpiration is the cause of mildew.

To a similar cause I venture to attribute damping in blooms, as a like result is obtained from the last experiment if blooms be substituted for leaves. The fact of the petals giving off water in the same way as leaves, though, of course, in a smaller degree, must not be overlooked. Damping, I have observed, is generally confined to blooms grown for size, on plants which have lost a great deal of their foliage from a too early ripening. I am inclined to think that overfeeding has little or nothing to do with damping, inasmuch as I have experienced from overfeeding exactly the opposite result—viz., the bud displaying a dry rot, and refusing to develop at all. I suppose a too early ripening of the plants is due to an exposed position, where they have practically no shade and no shelter from the summer sun. I placed some plants so as to be shaded from the sun between the hours of 11 A.M. and 2 P.M. during the months of June and July, and I fed them twice as liberally as those fully exposed. The former when housed were ripened about halfway up the stem, and the result appeared to afford weighty testimony to the validity of my conjecture. This was especially noticeable amongst the weak varieties. Bearing on this point, in conclusion, I would draw your attention to the fact that whereas warmer countries easily ripen seed, in which we practically fail, they cannot produce blooms such as those exhibited by the National Chrysanthemum Society.

CHRYSANTHEMUMS FOR EXHIBITION.

By Mr. CHARLES GIBSON.

ONE of the first things an intending exhibitor has to do is to ascertain how many plants can be properly housed, and also how many can be well grown through the summer. Better results will be secured from 300 well attended plants than from double that number partially neglected. Selection of varieties is another important matter; but with

the valuable additions we have of recent years it is much more easy to obtain a good selection than formerly. The beautiful new Japanese seedlings have so enriched the collections that it makes us wish for new incurved seedlings besides the valuable sports we have in that class. Perhaps the most convenient way to ascertain which are the best varieties for exhibition is to take the National Chrysanthemum Society's catalogue for a guide, and then note the varieties in the winning stands at the exhibitions. Good novelties possess much interest, and should be added when possible. Directly the exhibitions are over, when the varieties seen are fresh in the memory, compare the list for the following season, marking against each variety the number of plants you intend to grow. Additional cuttings should be inserted to allow for losses and weak plants. It is much better to have a choice of plants in the spring, and be able to reject any that are weak or not quite satisfactory. The strong competition of the present time should induce the exhibitor to grow specially for the classes in which he has a chance to win. It is much better for him and for the exhibition too. A grower who has a small number of plants stands little chance of winning a prize in a large class; but by growing a few plants each of the best varieties, and entering the smaller classes, he is much more likely to be successful. Large exhibitors, too, are more successful in the end by not attempting to do too much.

Having determined the numbers and varieties to be grown, and so commenced for the season, make due provision to protect the plants from checks of all kinds. The Chrysanthemum is subject to so many checks that constant attention is required throughout the year. Injury arises through suddenly exposing them to cold draughts, especially if struck in heat, by allowing them to become root-bound before repotting, and by the soil becoming dry at any period of their growth, or by excessive use of chemical manure. I will detail a few points of the system of culture I have followed with a fair amount of success.

CUTTINGS.

These are inserted at the end of November and the beginning of December, and are placed in a cold pit. I have inserted cuttings much later with good results, but it is convenient to have them early, and to be able to clear out the large pots. I prefer strong and sturdy cuttings about 3 inches long taken off level with the soil in the pot in preference to those dug out of the soil or stem cuttings, although stem cuttings are used occasionally when others are not to be had. Small 60-sized pots are used, placing one cutting in each pot. A crock is placed over the hole of each pot, and the pot is filled with soil, consisting of half loam, half leaf mould, and a fair amount of sand. The base of the cutting resting on a little silver sand, the soil is made moderately firm, and is then ready for the pit. Any good varieties that have deteriorated for more than a season are obtained from a fresh source, where they can be depended on being true to name. A change of stock is always desirable where good exchanges can be made. The cuttings are placed in a cold pit, or with only such heat as is desired from a Melon bed made the previous spring, and are arranged a few inches from the glass. The cold pit has an inconvenience in the covering it requires, but I think the cuttings are improved in constitution by the cool treatment, though it would be injurious to cuttings taken out of heat to place them in a cold pit. Where large blooms are grown it is necessary to use fire heat for two or three weeks to protect them from damp, and in my opinion a cool after treatment is beneficial to them when the cuttings are hardy and vigorous. As the cuttings are rooted we remove them to an adjoining pit, where they are gradually inured to air, and when well rooted they are ready for

POTTING.

The strong growing varieties are placed in 6-inch pots, the weak growers in 4-inch pots. The following I consider weak varieties:—In the incurved, Empress Eugénie, Barbara, Mrs. Heale, Mrs. W. Shipman, Lady Hardinge, Nil Desperandum, Princess Beatrice, Cherub, Princess of Wales, Miss M. A. Haggas, Violet Tomlin, and Mrs. S. Coleman; in the Japanese, Meg Merrilies, Ralph Brocklebank, Japonais, Madame John Laing, L'Adorable, Criterion, and Jeanne Delaux. The shift into 6-inch pots is a large one, but it succeeds well with me. The plants are well watered before potting, and the soil being in a moist condition they do not require water for some time, and the roots quickly take to the new soil. The pit is kept rather close for a few days; the plants are damped over the foliage occasionally of bright mornings. When the soil is becoming rather dry they are given one good watering, after which the plants are separately watered as required. There is danger of the weak varieties not rooting quickly into the 6-inch pots, the soil becoming heavy and possibly dry, and that is why the smaller pots are used, but they are transferred into the 6-inch pots as soon as they are fairly rooted, and not allowed to become root-bound.

The soil at this potting consists of two-thirds loam, one-third of leaf mould, a free addition of sand, and a 6-inch potful of bone dust to each two bushels of soil. The pots are carefully crocked, and a little rough turf placed over the crocks. As the plants are established in their pots they are gradually hardened, until the lights are left off night and day. The final shift is given from the last week in May until the second week in June, placing the strongest growers into 10-inch pots, and the others in 9-inch pots. The soil is made up of two parts loam, medium for stiffness, half part of well decayed cow manure, half part leaf mould from Oak leaves, a liberal amount of sand, and a 6-inch pot of bone dust to every barrowful of soil. A little soot and wood ashes is added, the whole well mixed together and placed under cover for use.

No detail in connection with the growth of this plant is considered of more importance than draining the pots, and it is quite equal in importance to the composition of the soil. Well crocked pots allow all superfluous water to escape; the free passage of air keeps the soil sweet, and assists the formation of healthy roots, capable of assimilating liberal supplies of liquid manure at a later stage. The soil is well rammed as potting proceeds, and the pots are then wheeled out to a sheltered position open to the sun, but sheltered from high winds. They are placed in rows 8 feet apart, to allow plenty of sun and air to reach them to assist in ripening the wood, and they are arranged on boards to prevent worms entering.

MANURES.

Many artificial manures are recommended for application. For the use of amateurs, and where the use of natural manures are objectionable, they afford valuable aid when used with care. For those unable to get a good supply of natural manures, and for application during a long spell of wet weather, they are beneficial. I have had the best results from natural manures obtained from a cesspool with the drainings from cowhouses and piggeries, to which is added a little soot. After an extended practice I am convinced a continued excessive use of artificial manures is one of the causes of damping in the lower florets of light coloured blooms.

(To be continued.)

THE NATIONAL CHRYSANTHEMUM SOCIETY.

THE Centenary Festival Banquet of this Society took place on Thursday evening, November 13th, at St. Stephen's Hall, Westminster. Lord Brooke, M.P., President of the Society, occupied the chair, and the presence of ladies proved to be a very pleasing innovation, and one which will undoubtedly be repeated in the future. Among those who sat down to dinner were:—

Sir Guyer Hunter, M.P., Major Isaacs, M.P., the Hon. Captain Greville, Sir Walter De Souza, Lady Bouche, Mr. Shirley Hibberd, Mr. R. Ballantine, Mr. E. C. Jukes, Mr. J. R. Starling, Mr. Richard Dean, Mr. C. H. Payne, Mr. Lewis Castle, Mr. G. Gordon, Mr. Brian Wynne, Messrs. Cates and Wilkinson, Captain Molesworth, Major Cresswell, Mr. Gladding, Dr. Spink, Mrs. Thrower (of Tasmania), Mr. and Mrs. Cannell, Mr. Glendinning, Mr. R. B. Laird (Scottish Horticultural Society), Mr. Sanderson, Mr. Daniels (Norwich), Mr. and Mrs. J. Wills, Mr. and Mrs. Segar, Mr. and Miss Barron, Mr. Bevan, Mr. Kemp, Mr. Williams, Mr. and Mrs. Laing, Mr. Stevens, Mr. Veitch, Mr. H. Turner, Mr. Jay, Mr. Nye, Mr. Dawes, Mr. Crute, and Mr. Addison.

The large hall was tastefully decorated with choice specimens of Chrysanthemums and other flowers, and the *tout ensemble* reflected great credit upon those responsible for the arrangements.

After dinner the usual loyal toasts were proposed and duly honoured, and the President next rose, amid cheers, to propose the toast of the evening, "The National Chrysanthemum Society." He said he felt very much the great honour of occupying the position of Chairman on that important and interesting occasion. (Hear.) It was a matter of very deep regret to him that he was unable to be present on the opening day of the Show, owing to the death of a very old friend, but his wife was present—(cheers)—and she was very much pleased with the beautiful exhibits, and the hearty welcome she received from all. (Cheers.) Yesterday he had the opportunity of going the round of the Show with Mr. Dean, and he thought he had never seen an exhibition of such beautiful flowers. (Hear.) It was needless for him to recount the history of the Chrysanthemum. It was one which went back 2000 years, and even before that time in China and also in Japan this most charming flower was cultivated. It was in Japan looked upon almost as a royal flower, because it was, he thought, an emblem of the Mikados of that country. Although it was known so early it was not until the year 1790 that the large flowering Chrysanthemum was introduced into England, when it first made its appearance in the Botanical Gardens at Kew. Since that time there had been many growers and lovers of the flower who had taken a deep interest in the Chrysanthemum, and brought it to the perfection in which they now saw it. He believed that in 1820 there were only about twelve different varieties of the flower, and now if they looked through the catalogue of the National Chrysanthemum Society they would be perfectly astounded at the number of varieties. (Hear, hear.) The Chrysanthemum was a very satisfactory flower whichever way it was looked at. If they looked at the reverse side there was some lovely colour to enhance the beauty of the petals. It was beautiful in every shape and form, and many growers in the country had brought it to such perfection that it was worthy to adorn any palace in the kingdom or in the world—(cheers)—and the great merit of the flower was that it could be as successfully cultivated by the small as well as the great growers. (Hear, hear.) With regard to the exhibitors, of course it was not possible for everyone to be successful, but the unsuccessful exhibitors knew that by competing they stood a chance of being, to use an apt expression, "quite at the top of the tree," and to occupy such a position on an occasion like the present must fill every other grower with deepest envy. (Laughter.) There had been many additions to their ranks since last year. He had the honour of taking the chair at their dinner last year. The members then numbered 615, but they had now increased to 734. (Cheers.) It was satisfactory to feel that not only the number of growers was increasing, but that the number of those who took an interest in the flower was also increasing—(hear, hear)—and he trusted that the Show

had been a benefit, not only to the Society, but to the proprietors of the important establishment in which they had met. (Hear, hear.) It was only right that it should be so because of the generous manner in which the management had met the Chrysanthemum Society. (Hear, hear.) The subject was one that he could dwell on at considerable length as he was very fond of flowers. He could not imagine anything more beautiful than the snow white Avalanche or the lovely Stanstead White, and it was most pleasing to know that in their efforts to cultivate this beautiful flower they had the sympathy and support of their fellow countrymen in all parts of the world. (Cheers.) In conclusion he thanked them for giving him the opportunity of occupying that proud position that evening, and he felt sure that though the flowers they had been exhibiting were fading, the memories of the hundredth anniversary of the introduction of the flower into this country would be long before they faded from their recollection. (Cheers.)

Mr. SHIRLEY HIBBERD then proposed the toast, "To the eternal glory of the golden flower that claims and obtains the constant homage and service of the National Chrysanthemum Society." He said it was his duty to recommend to their favourable consideration the flower that had brought them together that night. He was quite incapable of doing so, and it seemed to him the wiser course to leave the flower to commend itself—(cheers)—for if they were not all of one mind the persuasion of the flower would heal their differences. (Cheers.) It seemed to him, however, that it was impossible that they could be otherwise than of one mind on that happy occasion. (Hear, hear.) The Chrysanthemum had been cultivated in China for more than 3000 years, probably 5000 years, and had been with us in England 100 years. He asked them to consider, in all that time, how much strength of generations of men had been bestowed on that beautiful object—their time, their means, their patience, and their thoughts by day and by night—and yet they had never obtained from it a loaf of bread or a medicine. It almost approached the impossible to obtain a walking stick from the Chrysanthemum. He had seen that done, but the stick was of no use. (Laughter.) And that applied to flowers in general. Our Roses, Dahlias, Carnations—they ministered in no way to our material necessities, but they were spiritual food for the soul of man, and sustained him amidst his trials. (Hear, hear.) Flowers were symbols. Roses were the symbol of strife in the dark days of English history; the Lily was associated with the history of France; then the simple Primrose reminded them of the sudden removal from among them of a great genius at a time when his country needed his wise guidance. But the Chrysanthemum was emblematic of all that was pleasant. It came at a time of the year when the world was preparing for the Christmas festivities. It was essentially a joyous flower, it was suitable for the palace, and it was suitable for the cottage. (Hear, hear.) Our flowers commemorated not only philosophers, poets, divines, scholars, but men who were not statesmen and philosophers, but only plain, good, simple English florists, who loved their flowers and laboured for them. (Hear, hear.) The catalogue of their Society brought to his mind memories—recalled the faces of George Taylor, Samuel Broom, John Salter, Robert Fortune, and Wm. Holmes—(cheers)—and it was the flower that enabled him to know the nature of their fine humanity. (Cheers.) He sometimes imagined that when John Keats sat down to write his sweetly dreaming poem, "Endymion," he must have had before him the Chrysanthemum when he penned the line,

"A thing of beauty and a joy for ever."

(Hear, hear.) He trusted if there was anything more to be said for the flower they would let it speak for itself, and he would ask them to drink to "The eternal glory of the golden flower. May the Chrysanthemum live and flourish for ever." (Loud cheers.)

Major L. H. ISAACS, M.P., proposed "The President of the National Chrysanthemum Society." He said there were many things in which Lord Brooke claimed their gratitude. There were many things about which, of course, he could not speak, but he thought he might safely say that Lord Brooke had shown a great desire, as President of the Society, to undertake his duties in an excellent and careful way. (Cheers.) Without further words he would ask them to drink the health of their President and Chairman. (Cheers.)

The PRESIDENT, in acknowledging the toast, said that among Englishmen no society of mark ever got on well without its dinner, and their Society was one of mark, as they would all admit. (Hear, hear.) There were, however, many things which would come across their minds. There was their dear friend Mr. Holmes, who was so recently Secretary of the Show, and who took such a deep interest in the Society. (Hear, hear.) On going round the Exhibition there were many things to bring to the mind touching recollections of Mr. Holmes, and he had on the present occasion very great pleasure in bearing testimony to the very good work which he did for the Society. (Hear, hear.)

Mr. E. C. JUKES proposed "The Lady Patronesses and Vice-Presidents," and Sir Guyer Hunter, M.P., in responding said he had that day had the pleasure of listening to two interesting papers read by members of the Society. When going round that magnificent display of Chrysanthemums he had wondered how it had all been brought to such perfection (hear, hear); but those papers had explained the matter to him. It was simply by attention to details—a course which always ensured success. If the Chrysanthemum had attained such perfection at its first centenary, what might it not be at its second? (Hear, hear.)

Mr. C. H. PAYNE proposed "The Affiliated and Kindred Societies." Mrs. MARIAN THROWER (Tasmania), on rising to respond, was

received with loud cheering. She said she would carry away with her pleasant recollections of that evening and of the Exhibition. She was very glad that ladies were present, and hoped that the custom would be continued. (Hear, hear.) Although they in the Colony could never hope to emulate the old country in the matter of flowers, yet she thought they would be able to imitate us at a very humble distance. (Hear, hear.) Mr. D. P. LAIRD (representing Scotland) also responded.

Sir W. DE SOUZA (L.C.C.) proposed "the Royal Aquarium and Summer and Winter Garden Society." He said he was present to testify—and he was sure they would all join with him in so doing—to the usefulness of that establishment, not only for amusements, but for shows like the present one and for mental culture. (Hear, hear.)

Captain MOLESWORTH responded.

Mr. BALLANTINE proposed "The Exhibitors and Judges." He said the Committee of the Society did their utmost, at this Centenary Festival, to lay their net carefully to catch all the fish they could. They prepared an elaborate schedule, and they had the gratification of knowing that the exhibitors took the bait, and came in shoals to the Centenary Festival. (Laughter and Cheers.) The character of the exhibits reflected credit, not only upon them, but upon the National Chrysanthemum Society—(hear, hear)—and in no part of England, in his opinion, had such a Show ever been held. (Cheers.) This was due to the noble way in which the exhibitors had come forward, not only to support the Society, but to pay a tribute of respect to one who had been removed from them. (Hear, hear.) It was Mr. Holmes' aim to make this festival such a success as would be worthy of the National Chrysanthemum Society to which he had devoted the best years of his life, and it would have been a pride to him to have seen the exhibits last Tuesday. (Hear, hear.) It was an extraordinary thing to say in connection with a show of such magnitude, but they had no protest against the awards of the Judges. (Cheers.) He believed such a thing was almost unprecedented, and it spoke well for the wisdom and tact displayed by the Judges, that even the exhibitors who had not been successful had not been able to find fault with the awards which had been made. (Hear, hear.) He would couple with the toast the names of Mr. John Laing and Mr. H. Turner of Slough, to both of whom the best thanks of the Society were due. (Cheers.)

Mr. JOHN LAING, in responding, said the exhibitors deserved great praise for the way they came forward, and he incidentally mentioned that thirty-five years ago Chrysanthemums were well grown in Scotland, blooms of the Queen of England being 6 inches in diameter.

Mr. H. TURNER, in also acknowledging the toast, said the task of the Judges was not a sinecure. In most of the classes the competition was very close and keen, and the number of stands in some of the larger classes compelled the Judges to walk up and down the tables many times until they must have accomplished miles of walking before they had finished their task. The class for the Centennial prize of twenty-four Japanese and twenty-four incurved had eighteen entries, and the class for twenty-four Japanese had sixteen entries. It was a pleasure for the Judges to have such grand specimens of this noble flower placed before them, and he and his brother Judges used their best endeavours to award their judgments to the most meritorious exhibits.

Mr. H. JAY proposed "The Officers of the Society." Mr. BALLANTINE said although the duties of the Society's officials had been no sinecure, they had been amply rewarded by the results achieved. He expressed the opinion that it was to the tact and judgment of Mr. Holmes, "the Prince of Secretaries," that in a great measure the success of that festival was due. (Hear, hear.)

Mr. J. R. STARLING also replied, and, as Treasurer of the Society, suggested that they should subscribe to a fund, part of which is to go to the assisting the technical education of the eldest son of the late Mr. Holmes. There were many other officers of the Society worthy of reward, but he felt that that evening had been marked to a certain extent by the loss of an officer they could never replace. (Hear.)

Mr. RICHARD DEAN (the Secretary) proposed "The Horticultural Press." He said that the life of institutions of that kind depended very largely upon the publicity given to them, and with regard to the Centenary he thought he might safely say that the Press generally had done them full justice.

Mr. GEORGE GORDON responded, and humorously remarked that if the horticultural press increased at the same rate as it had done during the last fifty years, by the second centenary of the Chrysanthemum he should think every type of that flower would have its own special paper. (Laughter.)

This concluded the toast list, and before the company separated the President announced that the proprietors of the Aquarium had promised to give a benefit for the "Holmes Fund," and he expressed the hope that they would all follow so good an example. (Cheers.)

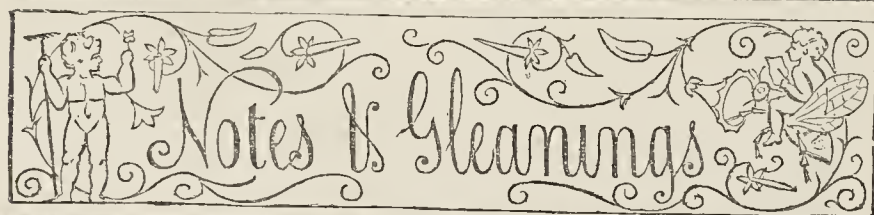
During the evening some excellent instrumental and vocal music was given, under the direction of Mr. Richard Mackway, and Mr. F. Valentine Goddard made a faultless toastmaster.

HELENIUMS.

SOMETIMES we meet with some of our neglected border flowers quite unexpectedly, and on the question being asked, "What have you here?" a common reply is, "Oh, it is an old plant we take no notice of. We don't care about such plants here." But these

plants ought to be cared for, for nearly all our border flowers possess attractions rendering them worthy of cultivation. Seldom do we meet with any of this family of plants in our fashionable gardens; a few of them may be seen in choice private collections, and can only be looked on as rarities. They are a race of plants that will thrive in any ordinary garden soil, but are all the better for being liberally treated. Loam and well-decomposed vegetable matter, and coarse sand mixed with the soil where they are intended to grow (and the ground should be broken up to the depth of 18 or 20 inches), will afford them the sustenance they need. They should have thorough drainage, and be supplied with water when required. Some of them, growing from 2 to 3 feet high, require staking to keep them from being broken by the wind. They may be increased by division in spring or autumn, and they flower towards the latter end of summer and in autumn.

Helenium pumilum is the dwarfiest of the tribe, and is a good border plant, having bright yellow flowers, which make a fine display when well established. *H. Hooperi* is decidedly the best of the family. This plant is so seldom seen that it cannot be much known to cultivators of herbaceous plants, or I am inclined to think it would be more frequently seen. When planted in open spaces in the shrubbery in good soil it is extremely effective. To see it in all its beauty the weakest growth should be thinned out, and the plants be supplied with liquid manure occasionally. It is excellent for exhibition purposes, and continues long in bloom. *H. autumnale* is a fine autumn-flowering plant of taller growth than the preceding, and is well adapted for border or shrubbery decoration, producing large flower heads, which continue until they are destroyed by frost, and it has been unusually attractive this season.—V.



WE have to thank several correspondents for reports of Shows and various communications, which are unavoidably withheld until our next issue.

— THE weather in the metropolitan district has been unusually mild for several days, with slight showers and occasional fogs. It is favourable for planting operations and other outdoor work.

— THE CENTENARY SHOW AT WESTMINSTER.—Mr. E. Mawley informs us that the total number of cut flowers staged in competition at the Centenary Exhibition recently held at the Royal Aquarium by the National Chrysanthemum Society amounted to 3837, and that there were in all 145 trained specimen plants.

— THE HOLMES' MEMORIAL FUND.—A FLORAL FÊTE AND BAZAAR.—The Directors of the Royal Aquarium having generously offered to give a special benefit in aid of the above Fund, it is proposed also to have a Floral Fête and Bazaar, the proceeds of which are to be devoted to the same object. A meeting of the Committee will be held in the Board Room at the Aquarium to-day (Thursday), November 20th, at 5 P.M., when it is hoped there will be a good attendance of all interested in the matter, so that arrangements can be at once made to carry the proposal into effect. Members of the National Chrysanthemum Society will be admitted on production of their passes at the staff entrance. Suggestions from those who cannot attend may be sent to the Hon. Secretary, Mr. Lewis Castle, Hotham House, Merton, Surrey.

— EXHIBITION OF HORTICULTURAL APPLIANCES AT THE CRYSTAL PALACE.—Arrangements are being made to hold an Exhibition in the Crystal Palace of the numerous and diversified articles required in the various branches of horticulture, Tuesday, March 3rd, to Saturday, March 21st, 1891. The entire length of the nave of the Palace will be apportioned to the several exhibitors. There will be two special competitions of exceptional interest, the arrangements and regulations for which will be sent on application. The first, a lawn mowing competition, to take place in the Crystal Palace grounds, and the second for the best spraying apparatus. Medals or certificates will be awarded for the above. All correspondence and inquiries to be addressed to Messrs. J. F. Peasgood and William Brooks, Crystal Palace, London, S.E.

— DURING the past fortnight CHRYSANTHEMUMS AT THE GRANGE, CARSHALTON, have constituted one of the best of the periodical displays which Mr. A. H. Smee throws open to the residents in the district. That this privilege is very highly appreciated is proved by the fact that nearly 3000 visitors have inspected the plants within the time named, and by means of the collecting boxes about £4 have been secured for the Gardeners' Orphan Fund. The 700 Chrysanthemum plants in 400 varieties are arranged in a long narrow bank sloping to the door of the Peach house, and have a capital effect, the plants being in excellent health, and in many cases, especially as regards the Anemones, the blooms are quite up to an exhibition standard. Mr. G. W. Cummins is an indefatigable worker in a good cause, and the result of the stall for the sale of fruit and flowers at the Croydon Show is a balance of over £7 for the Fund already named.

— HARDY FRUITS.—It has been arranged that Mr. Joseph Cheal of Crawley, as a representative of the British Fruit Growers' Association, shall read a paper on Hardy Fruits at the next meeting of the Croydon Gardeners' and Amateurs' Mutual Improvement Society, of which Mr. Stanley B. Baxter, Woodside Road, is the Hon. Secretary. The meeting will be held in the County Tavern, West Croydon, on Tuesday, November 25th, at 8 P.M. It is hoped that Mr. Philip Crowley will take the chair, and a large attendance is expected.

— LAMBETH AND SOUTHWARK CHRYSANTHEMUM AMATEURS.—The sixteenth Exhibition of these pioneers who endeavour to grow Chrysanthemums in the very heart of our metropolis was held at the Horns, Kennington, last week, and, considering the difficulties under which the exhibitors labour, it was a very creditable show. Trained plants and groups were alike very creditable, while the several classes, numbering forty-five, were nearly all filled. Though the cut blooms were not large they displayed throughout a keenness for neatness and variety. In one stand we observed a fairly good bloom of Mrs. Alpheus Hardy. Messrs. Filmont and Williams were the principal exhibitors of trained plants, and Davidson, Roberts, Williams, Sharpe, and Hillier in the cut bloom classes.—M.

— MR. W. J. GODFREY, Exmouth, writes:—"Herewith I beg to send a bloom of JAPANESE CHRYSANTHEMUM *Lucrèce*. I regret I did not send it before, but I exhibited a stand of these at our local show and Exeter, and the bloom has been knocked about. I may say that I do not "go in" for large blooms generally, but this is a very good one for the purpose, as it makes large leathery leaves, very robust, and about the same height as *Avalanche*. It is a French variety (1888), and I had it under the name given above. We grow from five to eight blooms on a plant." [The bloom sent had evidently been a very handsome one, but it suffered in transit; the variety must be well worth growing.]

— HAMMERSMITH HORTICULTURAL SOCIETY.—The fifth annual Exhibition was held on the 13th inst. In the group class for Chrysanthemums, first honours were awarded to a bright collection staged by Mr. Hodge, gardener to J. J. Ford, Esq., Park Side, Ravenscourt Park, W., who also showed cut blooms successfully, as did Mr. J. R. Wood, gardener to Mrs. Sanderson, Duke's Avenue, Chiswick. The premier position for Apples and Pears was taken for excellent samples exhibited by Mr. J. Addison, gardener to Mrs. Lloyd, Merton Lodge, Chiswick. Good non-competitive groups of Chrysanthemums were contributed by Mr. May, gardener to the Marquis of Bute, Chiswick; and Mr. Chadwick, gardener to E. M. Nelson, Esq., Ealing.

— GRAPE GROWING AND GRAPE KEEPING.—Under this heading (see page 400) Mr. Scott relates his practice, which he especially recommends to those who have lately taken upon themselves the responsibility of a head place. It will be equally as interesting to those who took a similar charge forty years ago, if Mr. Scott would kindly explain to us the utility of those nostrums he prescribes for Vines infested with insects. To me the prescription is very familiar, and readily recalls to my mind the days long since passed, when I was a practiser of the fine art, commonly termed a Vine smudger. My experience in the use of it on Vines is that what remains on the Vines which has not been bespattered on to the glass, and may be a fresh painted house, by the use of the syringe forms a warm protection to the surviving insects, and should they be the mealy bug, they perfectly revel under it in the minute crannies into which such a compound could not possibly enter, and that I think should be sufficient reasons for its discontinuance. Until Mr. Scott can produce to gardeners, both young and old, some counterbalancing influences which are not generally understood, the policy of cleanliness is the best to be trusted.—RICHARD WESTCOTT.

— HULL CHRYSANTHEMUM SHOW, as we learn by a telegram on the eve of going to press, is in every respect a great one. The 25-guinea cup has been finally won by Mr. P. Blair, gardener to the Duke of Sutherland, Trentham.

— RUNNER BEANS.—Of all vegetables I firmly believe that the Scarlet Runner Bean is the most popular among the labouring classes, and I think that they have reason on their side, for without doubt it is the most nutritious vegetable grown. It is so easy of culture and so ornamental that no wonder every cottager delights in his rows of Beans. There are so many new varieties come out lately that large pods are now the rule instead of the exception. I tried two varieties in addition to the old scarlet; Ne Plus Ultra, with very long somewhat narrow pods and smooth skin, a Bean which for quality cannot be approached, and which has high cropping qualities, combined with earliness in addition. Titan is very appropriately named, for the pods are truly immense, which will make it a great favourite for the exhibition table. In addition to being very long the pods are broad, but the skin is somewhat rough. It did not have quite such a good chance as the others, but it was a long way in front for size, and was also a very good cropper. I grow both my main crop and late Peas and my Runner Beans where I have the previous year grown Celery, and for that purpose plant my Celery at intervals running north to south all over the garden, which I find suits my crops of Peas and Beans admirably later on. I never grow them at less than 12 feet apart from row to row, which I believe enables me to grow more crops in a given space with a better return from the Peas and Beans than if I grew them in quarters by themselves.—H. S. EASTY.

— MR. WM. FALCONER contributes the three following notes to the *American Florist*:—*DESMODIUM PENDULIFLORUM* was at its best in September. Although of sub-shrubby nature we cut over ours close to the ground every year as one would a Phlox or Larkspur, and this treatment suits it best. The clumps are now 6 feet high, more than this across, and a solid shower of reddish purple Pea flowers. It is of no use for cut flowers, but very desirable as a garden plant. The white flowering form is commonly known as *D. japonicum*, and although beautiful and desirable in its way is not as free and airy as is *D. penduliflorum*. Botanists give us *Lespedeza bicolor* var. as the proper name of these *Desmodiums*.

— *HELIANTHUS MAXIMILIANI* flowered well throughout October. In moderately mild localities, as this is, it is a very desirable and showy plant, and especially valuable for its late blooming character. It grows from 7 to 10 feet high, and its long stems are terminated for 2 or 3 feet with bright golden yellow flowers set in close to the stem. The species is a native of the plains and prairies west and south-west of the Mississippi, and although not generally regarded as being perfectly hardy in the north we find it hardy enough here. It is very easily increased by division and root sprouts in the same way as is *H. multiflorus*.

— *ROSA NITIDA* is a wild Rose indigenous to swamps from Newfoundland to Massachusetts, and rare in cultivation. It grows from 2 to 3 feet high, has very glossy leaves and mossy prickly stems. It is now laden with round bright scarlet fruit, which is very ornamental, and so persistent as to remain upon the bushes over winter and till next spring. It keeps its foliage late into the fall, and the leaves colour up very brightly in autumn. Although it is an inhabitant of swamps it takes readily to garden cultivation and spreads considerably at the root. This, together with *Rosa rugosa* and *R. rubrifolia*, have now the fullest and brightest crop of ornamental fruit. A little later on *R. lucida* will also show up prettily, and so too will the *Polyantha* Roses, especially the one called Simplex.

— *HYMENOCALLIS MACROSTEPHANA* is the most robust as well as the most beautiful and fragrant of all the species of the genus. The large, pure white, deliciously scented flowers are arranged in dense umbels raised well above the leaves, which are about 2 or 2½ inches long, oblanceolate, bright green, and in themselves exceedingly decorative, even when the plant is not in flower. My plant, received a few years ago from B. S. Williams of London, blooms regularly every year in September. The bulb has attained a large size, but as yet has made no offsets. It is grown in a compost consisting of equal parts of well rotted stable manure, leaf mould and sand. All the *Hymenocallis* in my possession—namely, *H. speciosa*, *H. ovata*, *H. littoralis*, *H. caribœa*, *H. expansa*, *H. crassifolia*, and *H. galvestonensis*, grow and flower in a living room as freely as *Pelargoniums*. *H. macrostephana* exceeds them all in vigour and in ease of management. The flower stem, which is

thrown up from the heart of the bulb, reached this year the height of 17 inches, and produced an umbel consisting of seven flowers, each 8½ inches long, with a cup 3 inches broad and segments 4½ inches long. Their Vanilla-like perfume is so strong that one flower scents a large room, and a flowering umbel an entire house. No one seems to know where this species, the best of the genus, comes from. Mr. Baker, of the Kew Herbarium, who has devoted a great deal of attention to the study of these plants, is of opinion that it may prove a hybrid between *H. speciosa* and *H. (Ismene) calathina*. I grow my plant in summer in the open in a half shady situation, and bury the pot to the rim in coal ashes.—H. NEHRING, *Milwaukee* (in *American Garden and Forest*).

ROYAL HORTICULTURAL SOCIETY.

NOVEMBER 11TH.

SCIENTIFIC COMMITTEE.—Present: Dr. M. T. Masters (in the chair), Mr. McLachlan, Mr. Pascoe, Dr. Scott, Dr. Oliver, Dr. Müller, Mr. Blandford, and Rev. G. Henslow, Hon. Sec.

Grapes Attacked by Larvæ.—With reference to the Grapes brought to the last meeting Mr. McLachlan remarked that the larvæ might very probably prove to be those of *Tortrix botrana*. It was a well-known pest on continental Vines, and had been exported to America. He recommended that the Grapes infested should be covered with a fine gauze net, and that the larvæ should be watched to discover their further stages.

Endogenous (?) bud.—Dr. Masters exhibited a drawing of what appeared to be an endogenous bud in the axil of a leaf of *Actinida*, embedded in the cortical tissue. Dr. Oliver remarked that the buds which arise from the roots of *Anemone japonica* are also endogenous. Similar buds on the roots of germinating plants are well known and described—e.g., by Van Tieghem.

Bull. Soc. de Bot. Fr., 1886, page 40; Irmisch, *Bot. Zeit.*, 1857, page 48, with pl.—The interpretation appears to be that in roots the pericycle is the most active layer, and such buds as arise from roots are developed exactly as lateral roots are from this generative tissue. On the other hand, in stems the pericycle is more often in abeyance, while it is from the cambium from which ordinary buds and adventitious roots arise.

Translucent Apple.—Professor M. Ward reported upon the specimen sent to the last meeting as follows:—"The Apple sent for my inspection was affected with a disease known as 'Glassiness,' and was totally free from fungi in the interior. The parts affected by this disease are distinguished by the cells being very full of sugar and singularly poor in acids. The intercellular spaces are filled with water, whereas in the healthy parts they contain air. This season, a wet one, has been somewhat prolific in such Apples. A condition not unlike this is produced by frost, and by any changes which cause the intercellular spaces to fill with water."

Chrysanthemum "Hen and Chicken" Form.—Mr. Gooding of the Manor House, Hayes, sent a remarkable specimen of a yellow variety with a large circle of small heads springing from the base of the central one. The latter was arrested in its growth, and dead. The florets had a tendency to be pedicellate, especially the outer ones. It is difficult to assign a cause, but possibly it received a check through frost, as no trace of insect attacks was discoverable.

Lycaste Skinneri, Monstrous.—Dr. Martin exhibited drawings of this plant received from Mr. Linden of Brussels, in which the flowers were aborted and replaced by petaloid bracts.

Leucadendron argenteum.—He also showed drawings of germinating plants of the Silver Tree of Africa, which showed a curious cavity at the base of cotyledons concircling the plumule.

CHRYSANTHEMUM SOCIETIES AND SHOWS.

Batley and District, Nov. 22nd; John T. Booth, Batley
Bedford, Nov. 19th and 20th; J. Sanders Clarke, 49, Linden Road
Bedford and Bedfordshire Chrysanthemum Society, Nov. 19th and 20th; Oliver C. Coombs, 28, Mill Street, Bedford
Chorley, Nov. 21st and 22nd; James Sargeant, 64, Market Street, Chorley
Green Street and District, Nov. 19th and 20th; W. G. Ray, Mount Pleasant Nursery, Green Street, near Sittingbourne
Hull and East Riding, Nov. 19th and 20th; Edward Harland and James Dixon, Manor Street, Hull and 2, County Buildings, Hull
Norfolk and Norwich, Nov. 20th and 21st; John E. T. Pollard, 7, Lady's Lane, Norwich
Rugby, Nov. 19th and 20th; William Bryant
Scarborough, Dec. 2nd and 3rd; Thomas Henry Pexton, 136, North Marine Road, Scarborough
Scottish Horticultural, Nov. 20th, 21st, and 22nd; R. B. Ferguson, 6, South St. Andrew Street, Edinburgh
Swansea, Nov. 19th and 20th; Messrs. T. Kneath and W. Roberts
Tiverton, Nov. 20th; R. P. Cosway, Lime Cottage, Tiverton
Westerham, Nov. 19th and 20th; Frank George Remnant, High Street
York, Nov. 19th, 20th, and 21st; J. Lazenby, 8, Spurriergate

TREE MOVING AT CANFORD MANOR.

A DISCUSSION upon tree moving, initiated by "D." in the pages of the *Journal of Horticulture*, has proved interesting and instructive to numerous readers, and although it is not my intention to take any part in this, I may be able to communicate a few facts having an important bearing upon the subject. It has been my good fortune to meet with many instances of what can be done in the way of moving large trees, and have known cases where eight men and as many horses have been a whole week in shifting single specimens about ten miles. That such proceedings are very costly must be admitted, but there is no gainsaying the remarkable effect they create, a few transplanted trees doing more to relieve the nakedness of new places, or to shut out unsightly objects, than can be accomplished in twenty years by other means. Naturally very much depends upon circumstances. Unless the work is done thoroughly, no reasonable expense or labour being spared, it is better left alone. Badly moved, the trees either perish or remain in a stunted state for many years, and in this case quite young trees planted at the same time would, and very frequently do, surpass them in every way in the course of a few years.

So much for my own views on the matter, and now for what my readers were led to expect from the heading of this article. Learning that tree moving on a large scale was being carried out by Mr. T. H. Crasp at Canford Manor, I made it my business to pay him a visit, and to take particular note of the methods of procedure

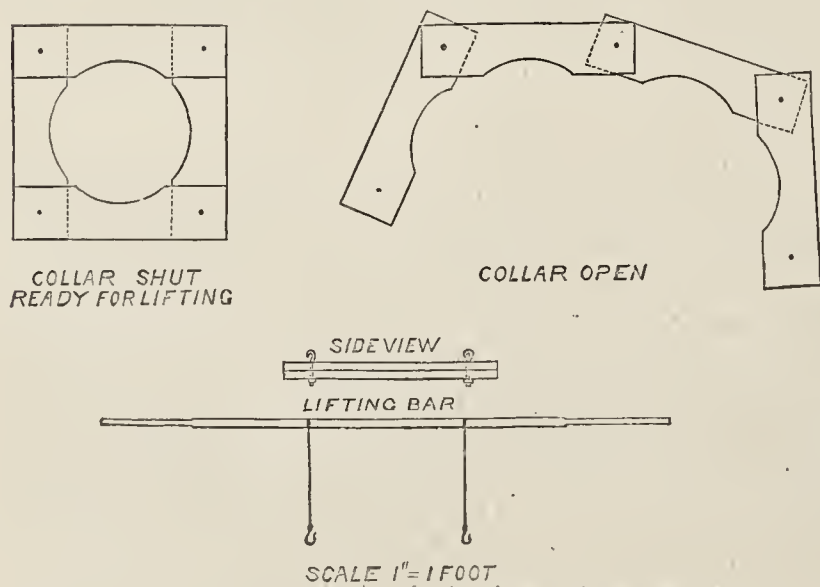


FIG. 60.—DIAGRAMS OF CRASP'S TREE-LIFTING COLLAR.

adopted. As has been previously stated in these pages, there are 50 acres of pleasure grounds at Canford, and to these are now being added 15 acres more. This entailed the removal of some old buildings, and the blotting out of more, and seeing that there are many thousands of shrubs, Conifers, and deciduous trees on the place so crowded together as to spoil each other, it was decided to at once create the desired effect with some of these. Mr. Crasp being a firm believer in doing such important work as early in the planting season as possible, commenced operations in September, several trees having been moved and much other good work done by the end of the month. Various deciduous trees, notably Horse Chestnuts and Limes, were moved when in full leaf and quite green, and when I saw them they were as fresh in appearance as they could be, and doubtless would form many fresh root fibres before the cold weather. Moving these, however, was child's play compared with what had to be done in the case of transplanting a grand specimen of *Thuja Lobbi* or *gigantea* a distance of about two miles. This fine tree, of which a sketch has been submitted to the Editor, is 50 feet high and 28 feet through near the ground, and knowing how well the work was done, and the subsequent attention bestowed upon the tree, I have no doubt whatever about the success of the operation.

Among other trees to be moved or already shifted are handsome specimens of *Picea nobilis* from 20 feet to 30 feet in height, *Picea cephalonica* of about the same height, *Taxodium sempervirens* somewhat larger, *Picea Pinsapo* also good specimens, handsome trees of *Cupressus elegans*, and some of the finest *Retinosporas* and *Thujopsis dolabrata* I have yet seen. In addition several hundred smaller specimen Conifers and various large shrubs are to be, or have already been moved, and in all probability this kind of work, for reasons already given, will have to be continued several seasons.

At Canford the subsoil is of a very gravelly nature, the top

spits being also full of pebbles. It is not, therefore, the worst of soils to deal with, nor is it the best, looseness and dryness having both to be contended with. Not a tree has been previously prepared in any way for moving, but in spite of this the necessary large balls of soil are well preserved about the roots. These masses of soil vary in weight from 5 cwt. to as many tons in weight, and it was estimated that fully 6 tons of earth was moved with the *Thuja Lobbi* already alluded to. In each case the methods adopted are much the same, the size of balls and apparatus for moving them necessarily varying. If, therefore, I describe the operation of shifting the handsome *Picea nobilis*, of which a photograph was taken when on the trolley, and a copy of which has been sent with these notes, this will suffice.

The first proceeding was to dig a wide, square, and deep trench so as to leave a ball rather more than 8 feet square, nearly the whole of which was preserved intact to a depth of 30 inches. Being well below the latter depth, the next step was to undermine the centre with crowbars sufficiently to admit of a stout plank 8 feet in length being thrust under, and this was duly blocked up lightly with the aid of piers formed with loose bricks. Four feet away from this on each side two other planks were similarly worked underneath the ball, and these being propped up with brick piers supported the edge of the ball when this was reduced to the desired width. The tree was then gradually undermined both ways, and planks added and bricked up as the work went on, these eventually supporting the whole weight of the tree, when the remaining subsoil was picked out. Good care being taken to build these brick piers on a solid foundation, and all of one height, or about 2 feet, the tree settled down on this without a hitch of any kind. While all this was being done by handy labourers, others were preparing a way out for the tree, an easy slope being needed.

Everything being thus well done, it was a comparatively easy matter to run a low strong trolley well under and close up to planks, the trolley being extra strong, capable of bearing 8 tons or more in weight, and constructed much after the pattern of the flat four-wheeled trolleys used for carrying luggage at railway stations. The bricks being knocked away the planks settle on the trolley, and the tree is ready for removal. Planks were laid for the trolley wheels to run smoothly over, but even with this aid it is not considered advisable to employ horses for drawing such heavy trees out, snatching and straining being bad for both the tackle and the trees. Instead of horses a strong "crab," or portable windlass, is used, and with this powerful aid the trolley is drawn out steadily and easily, scotches, however, being handy for stopping running back in case of either the ropes or chains snapping, as they sometimes do under the strain. Being once on the hard road planks were dispensed with, and four powerful horses managed to draw the tree to its destination.

Once more both planks and "crab" were brought into requisition. Being drawn with the aid of the latter into the exact position in which it was to remain, brick piers were once more formed under all the planks, and these supported the tree after the trolley was undermined and then drawn out. Fresh good soil was then banked well up to the central plank, which was removed, and more soil very firmly pressed under so as to be well up to the old ball. This process was continued from the centre till all the planks were knocked away, and the tree was once more resting on the ground. Four days altogether were expended on the transplanting of this tree at a cost probably of less than £6, including horse labour.

For moving smaller trees, or any that two or four men can lift when duly prepared, Mr. Crasp has a handy invention of his own, and which is well worthy of being generally used. It consists of four elm boards each 3 feet long, 9 inches wide, and 1½ inch in thickness, all being hollowed out somewhat so as to form a circular hole in the centre when put together, without, however, impairing the strength of the boards. They are bolted together, a loop end being formed on the upper side of each bolt, and either being removed, the collar can be placed round the ball of a tree and again connected. First, however, a square trench is cut round the tree, so as to leave a ball 3 feet each way, the latter being then undermined sufficiently to admit of the collar being placed in position and connected. Each corner of this is then blocked up with bricks, and these, when the tree is undermined, support the collar and the tree. Occasionally a strong two-wheeled stone trolley with long powerful handle is run under the tree, and, the bricks being taken away, all is ready for removal. More often, though, strong cord loops are placed to each iron crook at the corners, and strong poles being passed through these two or four men lift the tree out of the hole and on to the trolley. The fresh site being duly prepared, four brick piers are again formed, the tree is lifted off the trolley on to these, soil being then firmly packed

under the centre and well up to the sides, after which the collar is disconnected at one corner, the piers removed, and the tree is resting on the ground as before.

It will be seen, that is if I have succeeded in plainly describing each of the processes, that there is no heeling over nor sliding. At no period is any portion of them called upon to bear its own weight, and altogether the soil must be very loose indeed or the opposite, and therefore given to break away in masses, if anything

syringing is frequently resorted to. Special manures will also be washed in, and during the next season abundance of water will be supplied to all requiring it. Instead, therefore, of a severe check being administered the probability is most of the trees will grow away more strongly than previously, and in any case will not lose any limbs.

Last February a pruned specimen Portugal Laurel, not less than 16 feet through, and known to have been undisturbed for a



FIG. 61.—TREE LIFTING AT CANFORD MANOR—*PICEA NOBILIS*, HEIGHT 40 FEET.

approaching failure occurs. At Canford most of the trees are moved from much impoverished ground, comparatively large and deep balls of soil and roots are preserved, and these are made perfectly flat and of the same squareness as the boards or collars. They are conveyed to ground well prepared and much richer than that from which they are taken, are planted rather high to allow for settlement and to give the roots the benefit of the best of the surface soil, and are placed on and surrounded by good soil. Nor is this considered all that is necessary. They all receive a thorough soaking of water at the roots, pointed iron rods being thrust through the balls the better to accomplish this, and overhead

period of not less than 100 years, was successfully moved by Mr. Crasp. The principal portion of the roots were in a solid pathway, and the tree was moved from where it was much in the way to a prominent yet by no means a favourable position among forest trees. Without much further attention it has already improved in health and appearance, and such will prove the case with other choicer trees being moved now. These extensive tree movings and alterations were largely instigated by Lady Wimborne, who takes a keen and intelligent interest in all that is done, and what is also worthy of note it will provide regular work to many men who would otherwise be unemployed.—I. M. H.

CHRYSANTHEMUM SHOWS.

WESTON-SUPER-MARE.—NOVEMBER 11TH.

THE sixth Exhibition of this Society, held in the Victoria Hall, was in nearly every department distinctly ahead of any of its predecessors, and proved to be in every respect an unqualified success. At few shows will better trained plants have been shown, and these certainly have scarcely been equalled in the south-western district. Cut flowers were also good and numerous, and various other classes were well filled. The arrangements generally were most satisfactory, and creditable alike to the Honorary Secretaries, Messrs. W. H. Vanes and S. Lewis, and the hard-working Committee, of which Mr. F. Farington is the Chairman. In the class for six trained specimens of large flowering Chrysanthemums Messrs. W. Brooks & Son were well first, having perfect examples of Mrs. J. Rundle, Mrs. Forsyth, Prince Alfred, Gloria Mundi, Guernsey Nugget, and Venus. Mr. C. Holland, gardener to W. Ash, Esq., was a good second, and Mr. W. Brown, gardener to the Rev. W. A. Aldridge, third. With four specimens, Mr. W. Daffurn, gardener to Donald Cox, Esq., was first and Mr. N. Lambert second. Equally fine were the trained specimens of Japanese varieties. Mr. Holland was first for six plants, these consisting of Bouquet Fait, Fair Maid of Guernsey, Source d'Or, Margot, Hiver Fleuri, and Bertier Rendatler. Mr. W. Brooks was a close second, and the foregoing exhibitors were the principal prize-winners in several other classes for Chrysanthemums. The best group was arranged by Mr. A. Whitehead, gardener to R. W. Gibbs, Esq., this being much superior to those arranged by four other competitors. Mr. Daffurn was first for a group of miscellaneous plants, being closely followed by Mr. Brooks, a third prize going to Mr. W. P. Emerton.

There were five competitors in the class for twenty-four blooms of incurved varieties, not less than eighteen to be distinct; but Mr. Wilkinson, gardener to C. C. Tudway, Esq., Wells, was easily first with massive and fairly fresh blooms. The back row consisted of Lord Alcester, Empress of India (two), Golden Empress (two), Bronze Queen of England, Lord Alcester, and Golden Queen of England. Middle row: Prince Alfred, Jeanne d'Arc (two), Violet Tomlin (two), Miss Haggas (two), and Hero of Stoke Newington. Front row: Princess Beatrice, Jardin des Plantes, Lord Eversley, Mr. N. Davis, Princess of Wales, Mrs. Heale, Lady Hardinge, and Barbara. Mr. W. Carpenter, gardener to A. Cole, Esq., Clifton, was second; and Mr. J. Tucker, gardener to Major Clarke, Trowbridge, third. The competition with twelve varieties was close. Mr. W. Daffurn was first, Golden Empress and Miss Haggas being his best; and was closely followed by Mr. W. Strugnell, gardener to A. R. Baily, Esq., Frome. Mr. R. Phillips, gardener to John Baily, Esq., Frome, was well first for six blooms; and Miss Charrington second. Japanese varieties made quite an imposing display, each class being very well filled. The best twenty-four varieties, distinct, were shown by Mr. T. Wilkinson, who had grand blooms throughout. The back row consisted of Mons. Bernard, Meg Merrilies, Etoile de Lyon, Sunflower, Avalanche, Baronne de Prailly, E. Molyneux, and Mr. Brocklebank. Second row: Gloriosum, Carew Underwood, Volunteer, Mrs. F. Jamieson, Mrs. Wheeler, Fair Maid of Guernsey, Golden Dragon, and Marguerite Marrouch. Front row: J. Delaux, Florence Percy, Madame Baco, Val d'Andorre, Madame Laing, Holborn Beauty, Lady Lawrence, and Sarah Owen. Mr. Carpenter was again second, and Mr. Tucker third.

There were several excellent stands of twelve varieties, and in this instance Mr. W. Strugnell was well first, having fine fresh blooms of Stanstead White, E. Molyneux, R. Brocklebank, Sarah Owen, Condor, Beauty of Castlewood, G. Daniels, Avalanche, Duchess of Albany, Mrs. J. Wright, and Val d'Andorre. Mr. C. Holland was a good second. Mr. Phillips was first for six varieties and Miss Charrington second. Mr. T. Wilkinson took the first prize for twelve blooms of Anemone flowered varieties, and was closely followed by Mr. Tucker, the last named taking the lead in the class for reflexed varieties, Mr. W. Brooks being second. Mr. Brooks was the principal prizewinner with vases, bouquets, and baskets of flowers, foliage and fruit, his exhibits in each instance being considerably above the average. There was a fairly good display of fruit, Apples being especially well shown.

BRIGHTON AND HOVE.—NOVEMBER 11TH AND 12TH.

THIS annual Exhibition was held, as in former years, in the Dome and Corn Exchange, near to the Royal Pavilion. Plants.—For years past groups have been remarkably well done at these Shows, being in their arrangement so distinct from what is generally seen in the neighbourhood of London. The banking up in an uniform and formal manner so often seen does not here meet with any favour. In most instances the arrangement is broken up by grouping colours, or by utilising well-grown plants surrounded by smaller ones. Thus, each has its distinctive features without any formality. The finish, too, of the groups is brought about by using dwarf plants of Pompons, and in most cases all of the outer pots within view are covered with moss. On this occasion three classes were provided for groups. The cup class for a group not to exceed 100 square feet was won by Mr. John Miles, Bristol Nursery, Kemp Town. Good selections of colours and extra fine blooms were here the chief points. Mr. George House, gardener to F. Mowatt, Esq., Withdean, a good second. In the next or smaller group, Mr. Fairs, gardener to R. Clowes, Esq., Hassocks, was first; and Mr. Collis, gardener to J. Barnes, Esq., Brighton, second. In the third, for a group of twelve plants, each one to stand upon the ground with a groundwork of Fern or other material, with one stake only to each plant, Mr. Spottiswood, gardener to Mr. Duddell, Queen's Park, was an

excellent first; and Mr. Geo. Miles, Victoria Nursery, Brighton, a good second. This was a pleasing style of grouping. With four plants in 8-inch pots, dwarf grown, Mr. Scutt was first with good examples of the style.

For four standards (always a very strong class at this Show) Mr. Hill was awarded first to four plants that would be hard to surpass, all being in good condition. Mr. Scutt was second in this class; a plant of Roseum superbum was exceedingly fine. With four pyramids, likewise a feature here, Mr. Meachen was first, staging good plants; Mr. Hill in this case being second, but again to the front with a well-done specimen of pyramid form. For four dwarfs, well-grown medium-sized plants, Mr. Scutt, gardener to Mr. Jenkins, Burgess Hill, was first, taking also the bronze Centenary medal, N.C.S., for the best-grown plant of all forms. Mr. Jas. Hill, gardener to M. Wallis, Esq., Withdean, second. A class for twelve plants in 6-inch pots always fills well. Mr. John Mills took the first with excellent plants, carrying good blooms. With six Pompons Mr. Scutt was easily first with plants not formally trained, but well bloomed and in good condition, Mr. Jas. Hill coming second with smaller plants.

Cut Blooms.—The challenge cup class for forty eight, twenty-four incurved and twenty-four Japanese, produced a moderate competition, Mr. F. H. Flight, Cornstiles, Winchester, winning with exceedingly fine blooms both of Japanese and incurved, the best flowers, Princess of Wales, Violet Tomlin, Golden Empress, Mrs. Heale, Jeanne d'Arc, Mr. Brunlees, Nil Desperandum, Mrs. Shipman, and Princess Teck amongst incurveds, and Edwin Molyneux, Etoile de Lyon, Japonais, Album Fimbriatum, and Sunflower amongst the Japanese. For twenty-four incurved only Mr. Philips, gardener to Dr. Baber of Meopham, Kent, was first, staging very good blooms—Miss M. A. Haggas, Lady Dorothy, and Barbara were amongst his best flowers. For twenty-four Japanese Mr. Glen, gardener to Mrs. Montefiore, Worth Park, Crawley, was a superb first—Stanstead White, Condor, Comte de Germiny, Etoile de Lyon being extra fine. With twelve incurved Mr. Jupp, gardener to G. Boulton, Esq., Eastbourne, was first with neat blooms of Bronze Queen, and others of the same family, and in the corresponding class for Japanese Mr. Hodges, gardener to S. C. Gibbons, Esq., Great Walstead, Lindfield, was first in a very strong competition of seven good stands. Six Anemone flowered brought Mr. Philips again to the front with fine flowers of Nelson, Mrs. Pethers, Dame Blanche, and others. Six incurved, one variety, Mr. Jupp was first with fine flowers of Miss Haggas, and Mr. Glen second with Queen of England. Six Japanese, one variety, was an extra strong class, Mr. Glen winning with extra fine blooms of Stanstead White, taking also the certificate of the N.C.S. for this exhibit. Mr. Hopkins, gardener to the High Sheriff of Sussex, was a good second with extra blooms of Thunberg.

Fruit.—Grapes were shown in good numbers. With blacks Mr. Philips was first amongst twelve entries with Gros Colman, and Mr. Hodges, gardener to S. Gibbons, Esq., Lindfield, second. For whites Mr. Glen was very strong with Muscat of Alexandria, fine in colour; Mr. Kemp, Coolhurst, Horsham, second. Dessert Pears were present in good numbers. Mr. Glen was first with Doyenné du Comice and others, Mr. Howell, gardener to H. Young, Esq., Withdeane, second, and Mr. Spottiswood a good third. Stewing Pears were represented by Catillac from Mr. Bunney, being extra fine samples, Mr. Fowler coming second with Uvedale's St. Germain. Apples of superior quality, both culinary and dessert, were staged. For the former Mr. Goldsmith, gardener to Sir E. G. Loder, Bart, Horsham, was first, showing extra fine fruits of Warner's King and others, Mr. Philips being second. For the latter Mr. Goldsmith was also first. Blenheim Pippin, Cox's Pippin, and Ribston Pippin were here finely coloured. Mr. Glen second. Four classes were provided for collections of vegetables. Messrs. Sutton's prizes were contested by seven exhibitors. Mr. Manton, gardener to Mrs. Clifford Brown, Bolney, took first, Mr. Philips second, and Mr. Bunney third. There were many other excellent classes to which we cannot refer in detail.

A word of commendation is due to the energetic Secretary, Mr. Mark Longhurst, who, with Mr. Rupert Miller and the hard working Committee, have been the means of rendering this now well known Society so successful.

LEEDS PAXTON SOCIETY.—NOVEMBER 11TH AND 12TH.

THE second annual Chrysanthemum Show promoted by the above Society was held on the above dates in the Leeds Town Hall, and was formally opened to the public at 1.30 P.M. on the 11th by the newly elected Mayor of Leeds, Mr. Alfred Cooke, supported by a considerable gathering of the most influential ladies and gentlemen of the town and district. The general appearance of the spacious hall was very fine. Down the centre were arranged three large groups of miscellaneous plants for effect; against the wall all round, except at the side occupied by the orchestra and platform, groups of Chrysanthemums and specimen plants were arranged, the quality of both these being far in advance of the exhibits in the same classes at last year's show. The orchestra was effectively furnished by a grand bank, Tree Ferns, Palms, and evergreen shrubs. A broad table across the front on the floor of the hall being attractively and effectively occupied with a fine collection of flowers made up as wreaths, crosses, bouquets, epergnes, &c., for competition and otherwise. Across the further end of the hall from the orchestra were arranged the tables for cut flowers, whilst up the sides were tables of fruit, vegetables, and table plants. An ante-room opening out of the lower end of the large hall was devoted to a class for dessert tables, each 8 feet by 4 feet, completely laid for six persons,

which brought three competitors, and proved, to the ladies at least, a most attractive portion of the Show.

Cut Blooms.—The principal class was one for thirty-six blooms, "not less than sixteen incurved and sixteen Japanese, distinct varieties." first prize a silver challenge cup, value 15 guineas and £9 cash. Second prize £6. Third £3. Fourth 30s. These prizes drew seven competitors, the first prize being awarded to Mr. Carlton, gardener to Mrs. Cope, Woolton, Liverpool, whose stands contained neat, medium sized, well finished incurved and large highly coloured Japanese. The varieties were as follows. Incurved: Back row—Empress of India, Golden Empress, Violet Tomlin, Lord Alcester, Emily Dale, Lord Alcester. Middle row—Miss Haggas (very fine), Princess of Wales, Queen of England, John Salter, Miss Haggas, and Prince Alfred. Front row—Mrs. Coleman (extra fine), Princess Teck, Hero of Stoke Newington, Mrs. Heale, Lady Hardinge, and Mr. Bunn. Japanese: Back row—Etoile de Lyon, Condor (fine), Ralph Brocklebank, E. Molyneux (very good), Madame C. Audiguier, and Etoile de Lyon. Middle row—Mons. Bernard, Val d'Andorre, Sarah Owen, Marguerite Marrouch, Criterion and Avalanche. Front row—Sunflower, Sarah Owen, Puritan, Mrs. F. Jameson, Stanstead White and Sunflower. The second prize in this class went to Mr. P. Leadbetter, gardener to Mr. A. Wilson, Tranby Croft, Hull. Third, Mr. Folkard, gardener to Sir J. R. Walker, Bart., Sand Hutton, York. Fourth, Mr. Bell, gardener to Mrs. Rowdell, Skipton.

For twelve incurved, distinct, open, Mr. Falkard was placed first, his varieties being Empress of India, Queen of England, Prince Alfred, Lord Alcester, Golden Queen, Lord Wolseley, Golden Empress, Alfred Salter, Princess of Wales, Violet Tomlin, and John Salter. Second, Messrs. Clark & Sons, Rodley. Third, W. Jackson. For twelve Japanese, distinct, open, first Mr. Jeal, gardener to Mr. W. J. Cheetham, showing Condor, G. H. Elliott, Belle Paule, Madame C. Audiguier, La Triomphante, Marsa, Charlie Sharman, Madame Baco, Mrs. J. Wright, Jeanne Délaux, Meg Merrilies, and Marguerite Marrouch. Second, Mr. J. H. Wood. Third, Mr. Pearson, gardener to Mr. W. Jackson. In a class for twelve Chrysanthemums, three incurved, three Japanese, three reflexed, and three large Anemones, Mr. W. Grix, gardener to Sir James Kitson, Bart., Gledhow Hall, Leeds, was first.

In the district class, limited to gentlemen's gardeners and amateurs residing within seven miles of the Town Hall, Mr. T. Newbould, Cragg Road Gardens, Rawdon, was placed first for twenty-four blooms (twelve incurved and twelve Japanese), winning a silver challenge cup, value ten guineas, and 100s. cash, his varieties being incurved, back row: Lord Alcester, Queen of England, Alfred Salter, and Empress of India. Middle row: Lord Wolseley, Miss Haggas, Princess of Wales, John Salter. Front row: Mrs. Heale, Golden Empress, Violet Tomlin, Jardin des Plantes. Japanese, back row: Etoile de Lyon, M. Bernard, Sunflower, and Condor. Middle row: George Daniels, Stanstead White, Madame Baco, and Madame Audiguier. Front row: E. Molyneux, Ralph Brocklebank, Belle Paule, and M. H. Elliott. Second Mr. J. Eastwood, gardener to Mrs. Tetley, Weetwood, Leeds. Third Mr. W. Grix. In other classes the most successful competitors were Mr. John Gordon, gardener to Mr. Bottomley; Mr. Newbould, Mr. Grix, and Mr. John Gordon.

Specimen plants were shown of very high quality, greatly in advance of those shown last year, Mr. J. Eastwood, gardener to Mrs. Tetley, taking the first prizes throughout the classes. The groups also were much better than last year, especially the Chrysanthemum groups. Mr. Teal won first honours for these, Mr. Eastwood taking second prize, Mr. Moore, gardener to Mr. Bowring, Allerton Hall, being placed third. For the miscellaneous groups Mr. Frankland, gardener to J. Barran, Esq., M.P., Chapel Allerton Hall, was first; Mr. Townsend, gardener to Mr. E. B. Faber, Stray Lee, Harrogate, second; Mr. J. Smiley, Monk Fryston, South Milford, third.

The prizes offered for the best arranged dessert table were won as follows:—First, Mrs. West, The Grange, Moortown; second, Mr. Ombler, The Green Dragon Hotel; third, Mr. G. Cooper, gardener to E. W. Beckett, Esq., M.P. Grapes were shown in excellent condition by Mr. Eastwood and Mr. Grix, the latter taking the first prizes in several classes. The same exhibitor being the successful winner of a prize offered for groups of natural flowers in vase or stand, his exhibit being a skilfully arranged large basket of flowers.

Bouquets were numerous shown and mostly good. Especially admired was a spray bouquet of new design, to be carried suspended in front of the wearer, exhibited, not for competition, by Messrs. Shaw Bros. of Knostrop, who had also a very fine exhibit of bouquets in variety and a handsome memorial cross. Table plants and vegetables were numerous and good, but space prevents further particularising in their case. The Show during the first day appeared to be quite a success from all points of view, and was well attended. Much credit is due to the energetic and hard-working Committee, and especially to Mr. W. Grix (President), and to Mr. J. Smith (Secretary) for having brought this Show in such a very short period of time to rank as one of the best amongst provincial Chrysanthemum Shows.

WATFORD.—NOVEMBER 11TH AND 12TH.

THE fifth Exhibition of the Watford Chrysanthemum Society was held in the Agricultural Hall of that town. The building is well adapted for the purpose, but with the increase of exhibits and growth of the Society, is now scarcely large enough to accommodate all comfortably. The Exhibition itself was the best yet brought together by the Society, the cut blooms, groups, and other exhibits being of the

highest excellence. Several contributions not for competition also added much to the attractiveness of the Show, especially the large central group put up by Mr. Myers, gardener to the Earl of Clarendon, President of the Society. This consisted of tall Palms and foliage plants, with Chrysanthemums carrying grand flowers, freely intermixed, and finished off with Bouvardias and Ferns, altogether forming a splendid group, which attracted much attention from visitors.

In class 2 (open) for the best group of Chrysanthemums (in which the bronze Centenary medal of the N.C.S. was added to the first prize), Mr. Ashdown, gardener to C. R. Humbert, Esq., Watford, was first with a very nice lot of dwarf plants with good blooms, the colours well balanced, and consisting of a fair proportion of Japanese and incurved varieties. Mr. Higgins, gardener to A. G. Lucas, Esq., Ashlyns, Berkhamstead, was a good second, having in the centre of his group a fine flower of Mrs. A. Hardy. Third, Mr. Davis, gardener to E. A. Woolley, Esq., Abbots Langley. Several other classes were devoted to groups of Chrysanthemums open to members of the Society, fourteen other collections being put up, and not a bad one among them. Groups of miscellaneous plants were also well done, the first prize going to Mr. Beckett, and the second to Mr. Neve, gardener to C. Van Raalte, Esq., Aldenham Abbey.

Cut Blooms.—These were staged in large numbers, the quality throughout being good and the competition keen, especially in the Japanese classes. Mr. Beckett, gardener to H. H. Gibbs, Esq., Aldenham House, Elstree, well upheld the leading position he has taken in the past, although a decided improvement is noticeable with other exhibitors both in the size and quality of their flowers. In class 3, for twenty-four incurved varieties, distinct, Mr. Beckett was a long way ahead of other competitors, having large solid flowers of Empress of India, John Doughty, Lord Alcester, Prince Alfred, Golden Empress, Alfred Salter, John Salter, Queen of England, Mrs. Coleman, good; Miss Haggas, Mrs. Heale, Mrs. Shipman, Lord Wolseley, Golden Queen, Violet Tomlin, Nil Desperandum, Lady Hardinge, Mr. Brunlees, Refulgence, Mr. Bunn, Princess of Wales, Lady Dorothy, Beauty, and Barbara. Second, Mr. Malcolm, gardener to J. Tomlinson, Esq., Tarporley, Cheshire. Third, Mr. Brown, gardener to R. Henty, Esq., Abbots Langley.

For the same number of Japanese, distinct, Mr. Beckett was again first among seven competitors, having very superior blooms. They were—Back row: Stanstead White (very fine), W. H. Lincoln (beautiful yellow), W. G. Drover, E. Molyneux, Boule d'Or, G. Daniels, Marguerite Marrouch, Etoile de Lyon. Middle row: Northern Light, Mrs. F. Jameson, Baron de Prailly, Holborn Beauty, M. Baco, M. Bernard, Marsa, Sarah Owen. Front row: Fimbriatum, Beauty of Castlewood, Sunflower, Avalanche, Val d'Andorre, Ralph Brocklebank, Mrs. E. W. Clark, and Volunteer; a very good stand. Mr. Dinsmore, gardener to T. F. Blackwell, Esq., The Cedars, Harrow Weald, was second. Mr. Malcolm third; an extra third also being awarded to Mr. Sturman, an enthusiastic Watford amateur grower, who had a very bright stand of flowers. For twelve incurved Mr. Vincent, gardener to W. B. Davies, Esq., was first; Mr. T. Lansley, Watford, second; Mr. Dinsmore third; and for twelve Japanese, first Mr. Folkes, gardener to T. F. Halsey, Esq., Gaddesden Piae; second, Mr. Lansley; third, Mr. Mundell, gardener to Lord Ebury, Moor Park, Rickmansworth. The competition was strong in the six of one variety classes, very fine flowers being staged. Six white Japanese.—First, Mr. Beckett with grand blooms of Stanstead White; second, Mr. Mundell with Avalanche; third, Mr. Malcolm with the same variety. With six of any other colour Mr. Beckett was again first with splendid flowers of E. Molyneux; second, Mr. Davis, gardener to W. Schrieber, Esq., Dalton House, Watford, with Etoile de Lyon; third Mr. Layzell, gardener to the Rev. K. F. Gibbs, Aldenham, with Sun flower.

A class was also provided for twelve Japanese staged with not less than 8 inches of stem, the prizes given by Messrs. Wood & Son, and here Mr. Beckett was again first, followed by Mr. Tidy, Stanmore Hall. In division 2, open to members only, Mr. Beckett was a good first with blooms very similar to those already mentioned, and for the same number of Japanese he was again invincible, having excellent flowers; Mr. Dinsmore being again second. For twelve Japanese in this division Mr. Mundell was first, having some fine flowers. With Anemone and Pompon varieties Messrs. Beckett and Brown were the chief prize-takers, and many other classes were provided for amateurs and cottagers, each exhibiting strongly. The cut flowers throughout the Show were well set up, the majority using the Beckett cup and tube. Miscellaneous groups were contributed by several local nursery and seedsmen, also Mr. Smith, gardener to Jones Lloyd, Esq., Langleybury. There was a large display of fruit and vegetables, the principal prize-winners being Messrs. Beckett, Brown, and Cox. The Show was admirably arranged, and much credit is due to the Hon. Sec., Mr. Humbert, and his Committee, and we are pleased to learn it was a great success financially.

BIRMINGHAM.—NOVEMBER 12TH AND 13TH.

THE Town Hall was the site selected for the thirteenth annual Exhibition of Chrysanthemums, fruit, &c., and the one under notice was the best of all both in extent and general quality of the exhibits. The arrangements were, as usual, perfect, the staging being completed in good time, reflecting great credit on all concerned. Mr. Lathom, Chairman of Committee; Mr. Jones, the Treasurer; and the Secretary, Mr. Hughes, laboured hard to make this Exhibition what it was—a great success.

Cut blooms form, perhaps, the most important part of the Exhibi-

tion, the greatest interest being centred in them by growers and the public alike. The principal class was that for forty-eight distinct varieties, half to be incurved and the remainder Japanese, and it may be stated that no less than eighteen competed for the handsome prizes of £20, £15, £10, £5, £3, £2. Mr. J. Lambert, gardener to Colonel Wingfield, Onslow Hall, Shrewsbury, was distinctly ahead, the incurved being very fresh, of large size, and well staged. The varieties were—Back row: Golden Empress, Alfred Salter, Mrs. Heale, Queen of England, Lord Alcester, Golden Queen of England, Princess of Wales, Empress of India. Middle row: Cherub, Lady Dorothy, Jeanne d'Arc, Prince Alfred, Hero of Stoke Newington, Mrs. Coleman, Violet Tomlin, Miss M. A. Haggas. Front row: Barbara, Lady Hardinge, Charles Gibson, Lord Wolseley, Refulgence, Mabel Ward, Princess Teck, Mr. Brunlees. The Japanese were large, heavy, and especially fresh. Back row: Mrs. Falconer Jameson, Sunflower, Avalanche, Etoile de Lyon, E. Molyneux, Madame B. Pigny, Bou'e d'Or, Belle Paule. Middle row: Madame J. Laing, Meg Merrilies, Sarah Owen, Jeanne Delaux, Eynsford White, Madame C. Audiguier, Thomas Stephenson, George Daniels. Front row: Golden Dragon, W. W. Coles, Mrs. C. Wheeler, Ralph Brocklebank, Criterion, Val d'Andorre, Mdle. Lacroix, Madame Baco. Mr. P. Blair, gardener to the Duke of Sutherland, Trentham, was second with heavy and fresh Japanese, smaller incurved, the most notable among the former being Sunflower, Mrs. Falconer Jameson, Etoile de Lyon, Stanstead White, Puritan, Holborn Beauty, W. W. Coles, and Gloriosum. Mr. J. Gould, gardener to P. N. Dale, Esq., Bromborough Hall, Cheshire, was a close third with neat incurved blooms, the Japanese being lighter. Mr. A. H. Cox, gardener to W. H. Watts, Esq., Elm Hall, Wavertree, Liverpool, fourth.

For twenty-four distinct varieties, half to be incurved and the remainder Japanese, there was a strong competition, Mr. J. Gould winning the first prize of £4 with even, large, and fresh blooms. Incurved: Golden Queen of England, Empress of India, Alfred Salter, Queen of England, Lord Alcester, Lord Wolseley, Golden Empress, Jeanne d'Arc, Mrs. Heale, Princess of Wales, Violet Tomlin, Miss M. A. Haggas. Japanese: Etoile de Lyon, Avalanche, Mrs. Falconer Jameson, Stanstead White, Boule d'Or, E. Molyneux, Condor, Mrs. C. Wheeler, Mons. Bernard, Criterion, Jeanne Delaux, Sunflower. Mr. Cox was an exceedingly close second, Japanese very large, especially Sunflower, Avalanche, and Belle Paule. The incurved were a little stale in one or two instances, Violet Tomlin and Mrs. Coleman being very fine. Mr. S. Bremmell, gardener to H. H. France, Esq., Hayhurst, Overley, Wellington, Salop, was third. Eleven competed.

For eighteen incurved, distinct, three entered, the best coming from Mr. J. Austin, gardener to the Earl of Dudley, Witley Court, Stourbridge, of good quality in every respect, comprising Jeanne d'Arc, Golden Empress, Queen of England, Golden Queen of England, Empress of India, Lord Alcester, Miss M. A. Haggas, Prince Alfred, Mrs. Heale, Violet Tomlin, Mrs. Coleman, Princess of Wales, Princess Beatrice, Lord Eversley, Hero of Stoke Newington, Cherub. Mr. A. Haggart, gardener to Mrs. J. Foster, Moor Park, Ludlow, was second with smaller but neat blooms. Third, Mr. J. Gould, larger but coarser. For twelve Japanese, distinct, nine competed. Mr. A. Coombes, gardener to Earl Dudley, Himley Hall, Dudley, was a good first, with large blooms very fresh, Mons. Bernard, Stanstead White, Japonais, E. Molyneux, Thunberg, Etoile de Lyon, Avalanche, Sunflower, Madame J. Laing, M. A. Deleau, Gloriosum, Madame Baco. Second, Mr. Cox, very close. Third, Mr. W. Comfort, gardener to G. A. Everett, Esq., Knowle Hall, Knowle. There was a strong competition in the class for twelve Anemone varieties, not less than six kinds, some excellent stands being staged among twelve competitors, Mr. J. Justice, gardener to C. S. Howitt, Esq., Norton, Worcester, having splendidly developed blooms of Mdle. Cabrol. Jeanne Marty, Lady Margaret, Dame Blanche, Miss Annie Lowe, Ruche Toulousaine, Fleur de Marie, and Sabine. Mr. W. Comfort was an exceedingly close second, Mr. Cox third, also staging well. Four classes were provided for growers residing within four miles of Stephenson Place, for which there were numerous entries, the blooms being of capital quality. Space forbids of a detailed account being given.

Groups of Chrysanthemums received much encouragement from the Committee on this occasion, prizes of £10, £6, £4, £2 being offered for a group not exceeding 80 square feet, quality of bloom being the leading feature. Four competed. After much deliberation the Judges eventually awarded first honours to Mr. E. Cooper, gardener to the Rt. Hon. J. Chamberlain, Highbury, Birmingham, who had very fine blooms of both Japanese and incurved varieties, but a deficient front arrangement, which somewhat spoilt the effect of an otherwise excellent group. Mr. W. H. Dyer, gardener to Mrs. Marigold, Park House, Edgbaston, was a good second with very large incurved blooms, but somewhat past their best; this and a defective front line of plants much marred this group. Mr. C. Thomas, gardener to F. A. Walton, Esq., The Friary, Handsworth, was third with plants carrying smaller blooms, but much the best arrangement. For a group of Chrysanthemums arranged with Ferns and foliage plants for effect, in a space not exceeding 40 square feet, Mr. F. Andry, gardener to J. Breedon, Esq., Park Road, Moseley, was an easy first with an arrangement possessing both lightness and quality of flowers. Mr. W. A. Powell, gardener to G. H. Kendrick, Esq., Somerset Road, Edgbaston, was second. Third Mr. S. Gibbs, gardener to J. B. Mawley, Esq., The Oaklands, Harborne.

Specimen plants are always well staged at this Show, the present being no exception. For nine large flowered varieties, Japanese excluded, Mr. E. Cooper was first with plants 3 feet to 4 feet in diameter, well clothed with foliage, not too formally trained, each plant carrying

on an average fifty well developed blooms, Queen of England, Venus, Golden Empress, Barbara, and Baron Beust being the best. Mr. C. Brazier, gardener to Sir T. Martineau, West Hill, Edgbaston, second. Mr. F. Cooper, gardener to H. Showell, Esq., Park Vale, Edgbaston, third. For six large flowered varieties, Japanese excluded, Mr. E. Cooper first; second, Mr. C. Brazier, both showing well. Primulas, bouquets, and fruit also constituted special features.

NORTHAMPTON.—NOVEMBER 12TH AND 13TH.

THE nineteenth annual Exhibition of the Northampton Chrysanthemum Society, held on Wednesday last, was a very great success, the large hall of the Corn Exchange being well filled with the various exhibits, the specimen plants decorating the sides, the groups in front of the orchestra, and the cut blooms on three tables extending down the centre, the whole being a very effective display.

Plants.—Prizes were offered for trained and untrained specimen plants to gardeners, amateurs, and cottagers, the productions of the amateurs and cottagers, who are mostly engaged in the boot and shoe trade, for which the town of Northampton is famous, comparing very favourably with the professionals. The trained plants were only of moderate size, but very well finished, the first prize for six going to Mr. Gwillam, gardener to Mr. Sheppard, Billing Road, Northampton, the second to Mr. T. Manning. Mr. Gwillam was also first for four untrained incurved; Mr. Birch, gardener to the Marquis of Northampton, second; Mr. Alexander, gardener to Messrs. Westley and Sons, Blisworth, third. The first prize for six Japanese, untrained, was also won by Mr. Gwillam, who had good bushes with flowers of excellent quality. Mr. Alexander was second, Mr. Reeve third. Mr. Gwillam, Mr. Birch, and Mr. Manning also won the prizes for Pompons.

Groups.—The groups were the chief feature in the Show, being well grown, dwarf, with flowers of excellent quality, such as are rarely seen at exhibitions. They were also well arranged, and the leading ones so close in the order of merit that there were but few points between them. The first prize for a 50 feet group was taken by Mr. Underwood, gardener to J. S. Bouverie, Esq., Northampton, which contained some very heavy blooms of Avalanche, Edwin Molyneux, and other leading varieties, with a good assortment of incurved blooms. Mr. Reeve, gardener to W. Coulson, Esq., was second with good plants, including some good incurved blooms; and Mr. Birch followed closely with an excellently arranged group, some dwarf plants of Val d'Andorre in the front, not more than a foot high, being very effective; but the incurved were very weak compared with the others. The groups from the amateurs were not so satisfactory. Some very good plants and blooms were shown, but the arrangements were bad, many of the plants being laid down and twisted to try and form a slope; whereas if they had been stood up in a natural manner the result would have been a much better effect. Mr. Hemmings was awarded first prize, Mr. Arnsby second, and Mr. Richardson third. The same exhibitors, with Mr. H. Dunkley, Mr. Seaton, Mr. Henman, Mr. P. Jeffery, and Mr. Law were very successful in the plant classes, all showing very creditable specimens.

Cut Blooms.—The classes for cut blooms were well filled, the incurved as a whole being well finished and very fresh, and the Japanese of good substance, three or four blooms of Mrs. Alpheus Hardy being shown. The chief class was for eighteen incurved, distinct varieties. In this Mr. Fyfe, gardener to Lord Wantage, near Northampton, formerly a member and exhibitor of the Kingston Society, exhibited well, and took the first prize with a stand of the leading exhibition varieties. Mr. Underwood was second, with Messrs. Plowman & Sons, Market Harborough, third. In the class for twelve incurved Mr. Fyfe was again first, Mr. J. Kightley, gardener to Sir Hereward Wake, Bart., second, Messrs. Plowman & Son third. For six incurved, distinct, Mr. Kightley was first, Mr. Fyfe second, and Mr. Underwood third. For six incurved, one variety, Mr. Fyfe was first with a good stand of Lord Alcester, Mr. Kightley second with a very fine stand of the highly coloured Jardin des Plantes, a variety generally well grown here, Messrs. Plowman & Sons third with Violet Tomlin.

In the class for eighteen Japanese, distinct, Mr. Fyfe was again first with a good stand of fresh flowers; Mr. Underwood second; Messrs. Plowman & Sons third. For twelve Japanese introduced since 1886 Mr. Underwood was first, Mr. Fyfe second, Mr. Alexander third. For six Japs, one variety, Mr. Alexander was first with finely developed blooms of Avalanche; Mr. Kightley second with a very even stand of Mrs. J. Wright; Mr. H. Birch third with Avalanche. Messrs. Gulliver, Plowman & Sons, and Alexander took the chief prizes for reflexed and Anemone flowered; and Mr. J. Holland, Mr. Manning, Mr. G. Coles (gardener to Earl Spencer), and Mr. Burrows were the chief prizetakers for table decorations and bouquets of Chrysanthemums. In the amateurs' division Mr. G. Stephens, Gt. Houghton, was first for eighteen incurved blooms with a very good stand; Mr. T. Mayes, Kettering, second; and Mr. Hemmings third. For twelve incurved Mr. Mayes was first; Mr. Warner, Pychley, second; Mr. Stephens third; the same exhibitors being also successful in the remaining classes of incurved. For twelve Japs Mr. Stephens was first, Mr. Mayes second, Mr. Dalby third. In the classes for six Japs distinct and six Japs one variety Mr. Stephens, Mr. Mayes, and Mr. Warner were successful. Mr. Stephens was also first for a table decoration. The prizes for fruits and vegetables were well contested, and made a good display. Messrs. Perkins & Son, Northampton, also exhibited a fine collection not for competition. Mr. E. Draper, the experienced Hon. Sec., and his working Committee are to be congratulated on the excellent Exhibition and the business-like method in which the details are carried out.

BOURNEMOUTH.—NOVEMBER 12TH AND 13TH.

THE fourth annual Exhibition of this Society was held in the Winter Garden adjoining the Hotel Mont Dore on the above dates, and proved to be both in the number of exhibits and quality far in advance of any that have preceded it. Bournemouth as a favourite watering place is becoming more popular every year, and the Chrysanthemum Show is certainly making rapid strides to the first rank of kindred societies in the kingdom. The weather during the earlier part of the first day was favourable to visitors, who attended the Exhibition in large numbers.

In the following notes on the Show we are indebted to Mr. Garner for help in all classes except those in which he competed.

In class 1, a silver challenge cup, value £8 8s., offered by the President, C. E. Baring Young, Esq., M.P., was won by Messrs. W. & G. Drover last year, consequently great interest was taken in the result of the contest for it this year. The cup must be won twice in succession or three times in all to become the absolute property of the winner. It was well won this year by Mr. Garner, gardener to Mrs. Braddyll, Amberwood, Christchurch, with an even stand of fresh incurved and highly coloured Japanese. Messrs. W. & G. Drover were second, their incurved being somewhat weaker. H. N. Middleton, Esq. (gardener, Mr. Gallop), was third. Five collections were staged in this class. A first-class certificate of the N.C.S. was awarded to the blooms in the winning stand, which included eighteen incurved and eighteen Japanese, not more than two of one variety. Class 1.—First prize, cup value £8 8s., and £3; second prize, £2; third prize, £1. The first prize stand comprised the following. Incurved, back row: Queen of England, Empress of India, Queen of England, Empress of India, Lord Alcester, Golden Empress. Middle row: Lord Wolseley, Miss M. A. Haggas, Princess of Wales, Miss M. A. Haggas, Princess of Wales, Lord Wolseley. Front row: Violet Tomlin, Princess Teck, Mr. Brunlees, Princess Teck, Mr. Brunlees, and Mrs. Heale. Japanese, back row: Sunflower, E. Molyneux, Carew Underwood, E. Molyneux, Baronne de Prailly, Sunflower. Middle row: M. Bernard, M. J. M. Pigny, Maiden's Blush, Thunberg, M. J. M. Pigny, Mr. Bernard. Front row: Mrs. J. Wright, Japonais, Thunberg, Avalanche, Japonais, and Mrs. J. Wright.

Class 2.—Twelve Japanese, distinct. First, Messrs. Elcombe & Sons, Romsey; second, Messrs. Drover; third, Mr. T. K. Ingram. The first prize stand contained—Back row: E. Molyneux, Baronne de Prailly, Meg Merrilies, Etoile de Lyon. Middle row: R. Brocklebank, Triomphe de la rue des Châlets, Madame C. Audiguier, Carew Underwood. Front row: Stanstead White, Mrs. C. H. Wheeler, Gloriosum, and Lady T. Lawrence. Class 3, also open, twelve incurved.—First, Mr. Garner; second, Messrs. Watts & Sons, nurserymen; third, Mr. Osborne, gardener to Rev. F. Hopkins. The blooms in the first prize stand were—Back row: Queen of England, Lord Alcester, Empress of India, Golden Empress. Middle row: Alfred Salter, Violet Tomlin, Miss Haggas, Princess of Wales. Front row: Prince Alfred, Jeanne d'Arc, Hero of Stoke Newington, and Princess Beatrice. The prize for the premier Japanese bloom, separately staged, was won by Messrs. Elcombe & Son, a grand Etoile de Lyon being selected. Messrs. Drover staged Golden Empress as the premier incurved.

In the second division, local, a N.C.S. bronze medal was given with the first prize for twelve incurved. Mr. Garner was first; Mr. Gould, gardener to Mrs. Dawson Damer, second; and Mr. Osborne third. In the same division for twelve Japanese, a similar medal was offered with the first prize, which also was won by Mr. Garner, Messrs. Osborne and Gould being second and third respectively. Seven staged in each class.

In the open class, a silver cup was offered for the best group of Chrysanthemums arranged in a space of 60 square feet. The cup has to be won once only. Mr. T. K. Ingram, nurseryman, was the winner. His group contained excellent blooms on very dwarf plants, carrying their foliage down to the rims of the pots. Messrs. G. Watts & Sons, the winners of the cup last year, were second this time with a group faultlessly arranged; but the quality of the blooms was not so good on the front of his group, and the plants were not quite so good in the foliage. Mr. T. H. Crasp, gardener to Lord Wimborne, was third. The blooms on his plants were past their best; a week earlier he would have stood in a better position, but some of the blooms at the back of the group were so fine that the National Chrysanthemum Society's certificate was awarded to Mr. Crasp for them.

The first prize for a smaller group, arranged in a space of 50 square feet, went to Mr. F. J. Ellis, gardener to Mr. Forbes, for a very prettily arranged group. Mr. C. Phillips, gardener to Mr. Hankinson, secured first place for best specimen plant.

The N.C.S.'s silver medal and £1 5s. for a group in the single-handed gardeners' division was won by Mr. Kettle, gardener to E. Terry, Esq. In the same division Messrs. Wood & Sons, Wood Green, London, presented a silver medal for twelve incurved cut blooms, not less than eight varieties; it was won by Mr. Shave, gardener to Mr. W. W. Moore. For twelve Japanese the N.C.S.'s bronze medal went to Mr. Kettle. Table plants and Primulas were exhibited in goodly numbers, and were a decided addition to the attractiveness of the Exhibition as a whole.

Grapes and vegetables formed an important feature of the Show. The principal prizewinners were Messrs. Garner, Read, and Bond. Both dessert and culinary Apples were very good, especially for this season. Dr. Hitchcock was first for dessert, and Mr. Boote, gardener to F. Ricardo, Esq., for culinary Apples. Some very pretty arrangements were exhibited in flowers, both for sprays, buttonholes, and bouquets. The cottagers, as usual, had some very fine exhibits. Honey in comb and

bottles was very good, and also the wax. Great credit is due to the Secretaries and others responsible for the arrangement of the Show; it was perfect in every way.

BATH.—NOVEMBER 12TH AND 13TH.

ALL things considered the Chrysanthemum Shows held at Bath are in advance of any others in the south-western counties. There may have been better cut blooms to be seen elsewhere, but at Bath the plants generally are very superior, and a grand show of fruit is always attracted. The Show under notice was certainly no exception to the rule, or either better or inferior to those preceding it, and it should be added, it is doubtful if any great improvement is possible in years to come. Messrs. Pearson and W. Jeffery are the joint Secretaries, and the work was, as usual, very well done.

Trained plants were scarcely so good as sometimes seen at Bath, but the classes were well filled. The best six specimens of large-flowered varieties were shown by Mr. J. Kerslake, gardener to W. J. Brown, Esq.; Mr. S. Kerslake, gardener to the Rev. E. Handley, being a good second, and Dr. Budd third. With six Japanese varieties Mr. S. Kerslake took the lead, showing remarkably well, Mr. J. Kerslake following closely. Mr. A. Hawkins, gardener to Mrs. Jolly, was also a successful exhibitor of plants, and R. B. Cater, Esq., exhibited well, though not so strongly as in previous years. Standards were poor, but the plants for conservatory decoration were good, and with these Miss Maitland was well first. The Centenary medal of the National Chrysanthemum Society was awarded to Mr. J. Kerslake, the exhibitor of the best six trained plants, and a silver medal was also given to the exhibitor of the best single specimen, a very well-flowered plant, 5 feet through, of Mrs. G. Rundle, and staged by Mr. A. Hawkins, being selected for this distinction. Four large groups of Chrysanthemums were arranged, but the Judges had no difficulty in making their awards, Mr. S. Kerslake being well first with a grand display, all the plants having good foliage and large fresh blooms. Mr. J. Kerslake was second, and Mr. A. J. C. Biss third. There were a considerable number of classes for miscellaneous plants, all being well filled.

Cut blooms were fairly numerous, and in some instances of great merit. There were four exhibitors of twenty-four large flowering varieties, distinct, and with these a very old exhibitor, Mr. J. Baylis, was easily first, having a fine fresh lot of blooms of the following varieties:—Back row: Lord Alcester, Beauty, Empress of India, Empress Eugénie, Queen of England, Golden Queen of England, Princess of Wales, Golden Empress, and Empress of India. Middle row: Princess of Teck, Lord Wolseley, Mrs. Heale, Bronze Jardin des Plantes, Jeanne d'Arc, Miss Haggas, Prince Alfred, and Bronze Queen of England. Front row: Barbara, Mr. N. Davis, Prince of Wales, Baron Beust, Mrs. Shipman, John Salter, Jardin des Plantes, and Mr. Brunlees. Mr. G. Tucker, gardener to Major Clarke, was second; and Mr. P. Mann, gardener to W. H. Laverton, Esq., Westbury, third. Mr. J. Baylis was also first for twelve incurved varieties, having very fine blooms of Empress of India (awarded silver medal for best bloom in the Show), Golden Queen of England, Lord Alcester, Golden Empress, Jardin des Plantes, Jeanne d'Arc, John Salter, Princess of Wales, Prince of Wales, Mrs. Shipman, Princess of Teck, and Mr. Brunlees. Mr. Wilkinson, gardener to C. C. Tudway, Esq., Wells, was second; and Mr. W. Robinson third. With six varieties Mr. W. Strugnell was well first and Mr. H. Pocock second.

Japanese varieties were more extensively shown, but some of the finest blooms gave evidence of being cut for some time, freshness being wanted. The latter remark does not apply to the first prize stands of twenty-four distinct varieties shown by Mr. P. Mann. The back row of these consisted of Comte de Germiny, Madame Baco, Avalanche, Golden Dragon, Etoile de Lyon, E. Molyneux, Stanstead White, and Sunflower. Middle row: Mons. Brunet, R. Brocklebank, Baronne de Prailly, Condor, Carew Underwood, Thunberg, W. W. Coles, and Madame C. Audiguier. Front row: Mons. Bernard, Duchess of Albany, M. J. Pigny, Japonaise, Mrs. F. Jameson, Stanstead Surprise, and J. Délaux. Mr. T. Wilkinson was second, and Mr. Carpenter, gardener to A. Cole, Esq., Clifton, third, the latter having the smallest but freshest blooms. Mr. Carpenter was well first for twelve varieties, having Triomphe des Châlets, Etoile de Lyon, E. Molyneux, Fair Maid of Guernsey, Sunflower, Condor, Mons. Freeman, and Sceptre Toulousain in good condition. Mr. J. Atwell, gardener to J. B. Brain, Esq., was second; and Mr. J. Tucker third. The best six varieties were shown by Mr. W. Robinson, Mr. W. Strugnell being a close second. Anemone-flowered varieties, though not numerous, were exceptionally good. For twelve blooms Mr. W. Robinson was first, the varieties being Nelson, Fabian de Mediana, Madame Clos, Jeanne Marty, John Thorpe, jun., Minnie Chate, Marginata, Mrs. Pithers, and Reine des Alvéoles. Mr. Tucker was second, and Mr. Wilkinson third. Six stands containing equal numbers of Japanese and incurved varieties were shown, not for competition, by Messrs. Garaway & Co., Clifton, among these being many of the best old varieties and several good novelties. Bouquets, vases, and wreaths were well shown by several exhibitors. The fruit, which quite filled one large room, was well worthy of being reported at length, but this we are unable to do in the present issue.

STAINES AND DISTRICT.—NOVEMBER 13TH.

ALTHOUGH the present is the first meeting of this Society under the above title (the Staines contingent having separated from Egham) the promoters are to be congratulated on the excellence of the exhibits throughout. Cut blooms were staged in considerable numbers and in

fine condition, while trained specimens and groups were alike good. There was a very large display of fruit and vegetables, the arrangements being well carried out by Mr. Bates, the courteous and painstaking Secretary.

Groups.—There were five collections arranged, and the best came from Mr. Orchard, gardener to Major-General Arbutnot, Thorpe, whose plants were of the highest quality, the flowers being exceptionally fresh and massive. Mr. E. J. Sims, gardener to J. M. Pimm, Esq., High Street, Staines, gained second honours for a well-arranged collection, the plants being dwarfier, but the quality was not so good. Mr. Thos. Cox, gardener to W. Hackwood, Esq., Herne House, and Mr. Hutchins, gardener to C. Ashby, Esq., Cambridge House, were placed third and fourth respectively, both exhibiting well. In the several classes for trained standards and dwarf plants, Messrs. Cox, Atherby, Sims, and Orchard took the principal prizes.

CUT BLOOMS.—In the class for twenty-four incurved, not less than eighteen varieties, Mr. J. Tomlin, gardener to E. Ashby, Esq., was placed first for a very even collection, consisting of Queen of England, Golden Empress of India, Lord Wolseley, Empress of India, Lord Alcester, Violet Tomlin, Golden Empress, Empress of India, Prince Alfred, Princess of Wales, Lord Alcester, Violet Tomlin, Miss Haggas, Charles Gibson, Hero of Stoke Newington, Princess Teck, Jardin des Plantes, Empress Eugénie, Norman Davis, Jeanne d'Arc, Lady Hardinge, Mrs. Heale, Hero of Stoke Newington. Mr. Sturt, gardener to L. L. Cohen, Esq., Englefield, was a very close second, and Mr. Ager third. For the best twenty-four incurved, not less than twelve varieties, Mr. Orchard secured the first award with Queen of England, Lord Alcester, Alfred Salter, Golden Empress, Queen of England, Emily Dale, Alfred Salter, Emily Dale, Venus, Refulgence, Miss Haggas, Princess Teck, Mrs. Heale, Mr. Brunlees, Jeanne d'Arc, Refulgence, Cherub, Mrs. Heale, Hero of Stoke Newington, Mr. Brunlees, Princess Teck, Miss Haggas, Mrs. Heale, and Mrs. Shipman. Messrs. Atherly and Bubb were placed in the order of their names. For twelve incurved Mr. T. Cox was to the front with good blooms of Jeanne d'Arc, Mr. Brunlees, Mabel Ward, Violet Tomlin, Mabel Ward, Princess of Wales, Mr. Brunlees, Jeanne d'Arc, Mr. Brunlees, White Venus, Antonelli, and Mrs. Dickson. Mr. W. Markham, gardener to Mrs. Hall, and Mr. Collings were awarded the second and third prizes.

Similar classes were provided for Japanese; all the stands were composed of fresh, large, and bright blooms. In the open class of twenty-four the competition was very keen, and Mr. J. Tomlin was placed first with Avalanche, Mr. C. Wheeler, Mons. Bernard, Stanstead White, Sunflower, Madame C. Audiguier, Edwin Molyneux, Avalanche, Madame Baco, Gloriosum, Etoile de Lyon, Mons. Freeman, grand; Carew Underwood, Fair Maid of Guernsey, J. H. Laing, Sunflower, Bertha Flight, Val d'Andorre, Mr. H. Cannell, Mrs. H. Cannell, Belle Paule, Criterion, Condor, and Marsa; a superb collection. Mr. A. Short secured second honours, being only a very few points behind the first prize stand; and Mr. Hutchins was third, both exhibiting in good form.

In the gardeners' class for twenty-four Japanese Messrs. Markham, Bubb, and Orchard received the awards in the order of their names, all running each other closely. Mr. Markham's collection consisted of Baronne de Prailly, Thunberg, Edwin Molyneux, George Daniels, Thunberg, Marguerite Marrouch, Avalanche, Baronne de Prailly, Mdle. Lacroix, Madame C. Audiguier, Avalanche, Yellow Dragon, Madame C. Audiguier, Roi des Japonais, fine; Criterion, Yellow Dragon, Jeanne Delaux, Triomphe de la rue des Chalets, Florence Percy, Val d'Andorre, Mr. H. Cannell, Balmoreau, and Jeanne d'Arc. For twelve blooms Mr. Ridley, gardener to F. Melville, Esq., gained the first prize, Mr. Cox the second, and Mr. Proudfoot, gardener to H. L. Manning, Esq., the third. The class for large Anemones brought several collections, the best coming from Mr. Orchard; it consisted of two Lady Margaret, two Jeanne Marty, Gluck, George Sand, Sabine, Marguerite Villageoise, Miss Annie Lowe, Mdle. Cabrol, and Mrs. Pethers. Mr. Ager was second and Mr. Hutchings third. Reflexed blooms were also remarkably fine, the prizes falling to Messrs. Orchard, Collings, and Ager in the order here given, and for Pompons, Messrs. Orchard, Hutchings and Proudfoot were first, second and third respectively.

Primulas, table plants, Cyclamens, and Zonal Pelargoniums, were plentifully exhibited, and received their share of admiration. Bouquets were fairly good, but the first and second prize exhibits for a floral ornament composed of Chrysanthemums and Ferns were very tastefully done indeed. Mrs. Mievill was first with a light and pretty arrangement, Mrs. Harris second, and Miss Jessie Mievill third. Very fine Pears were exhibited by Messrs. Ager, Hutchings, and Sims, who secured the awards; the dish of Pitmaston Duchess sent by Mr. Ager were good indeed. Messrs. Bradley, Whitman and Orchard were the prizetakers in the order of their names for good collections of vegetables, of which there were numerous contributions.

TEDDINGTON.—NOVEMBER 13TH AND 14TH.

AN earnest horticultural enthusiasm has for some years distinguished the amateurs at Teddington, and to this Mr. W. Furze of The Roselands, Mr. Howard, and Mr. Douet have very materially contributed. Mr. Furze, in particular, has helped very greatly in the development of the Chrysanthemum Society and Show, both by his personal influence amongst the residents in the district, and by contributing liberally from his garden handsome examples of all the leading Chrysanthemums. Mr. Douet has also worked well in the same interest, and they have been supported by a good Committee, so that it was not surprising last

week that the Show proved one of the best the Society has yet held, both in the number and quality of the exhibits, all the space available in the Town Hall being taken advantage of for groups, specimen plants, and tables of cut blooms, fruit, vegetables, and floral decorations. The arrangements were well managed by Mr. Anderson, the Secretary, assisted by several members of the Committee.

The principal class was that for twenty-four incurved and twenty-four Japanese, the first prize being a five-guinea challenge cup. This was won by Mr. E. Coombs, gardener to W. Furze, Esq., with handsome blooms in both sections, deep clean incurved and bright fresh Japanese. Mr. T. Higginson, gardener to Lieutenant-General Vials, Teddington House, and Mr. W. Cave, gardener to Mrs. Holberton, The Cedars, were second and third respectively, both showing capital blooms. With twenty-four incurved and the same number of Japanese Mr. Coombs was first in both classes, the varieties being as follows:—Incurved: Emily Dale, Princess Teck, Violet Tomlin, Lord Wolseley, Beauty, Barbara, Queen of England, Alfred Lyne, Perle Précieuse, Lord Alcester, Mrs. Heale, Golden Empress of India, Ada Spaulding, Prince Alfred, Hero of Stoke Newington, Miss Haggas, Princess of Wales, Mrs. Shipman, Jeanne d'Arc, John Salter, Empress Eugénie, Mrs. Coleman, Empress of India, Refulgence. The Japanese were Etoile de Lyon, Stanstead Surprise, Sunflower, Florence Percy, Val d'Andorre, M. Délaux, Stanstead White, W. W. Coles, Mr. Wellam, E. Molyneux, Volunteer, Marsa, Gloriosum, Mrs. Wright, Hamlet, Madame C. Audiguier, M. Bernard, Album Fimbriatum, M. Elliott, Belle Paule, and Japonais. The three prizes in these classes were gained by Messrs. Cave, Fletcher, and W. Davis, gardener to T. P. Chappell, Esq., Weir Bank. In a number of smaller classes the same exhibitors also had good stands of blooms.

In the group and plant classes the principal prizes were won by Messrs. Rickwood, gardener to Lady Freake, Fulwell Park, Twickenham; T. Gregory, gardener to F. Weymouth, Esq., Bushey Park; Higginson, and Sallows. The fruit and vegetables were good, the floral decorations as usual being very tasteful.

WIMBLEDON.—NOVEMBER 13TH AND 14TH.

THE Drill Hall is an excellent place to hold an Exhibition, and the one here noticed had a good effect, the groups of plants being around the sides of the hall with tables running the whole length of the building, on which were placed the cut blooms and fruit. The boxes of blooms on each side of the table were divided by a row of table plants, Primulas and Cyclamens, which had a pretty effect. The arrangements were carried out in an efficient manner by the Hon. Secretary, Dr. Walker.

For a group of Chrysanthemums in pots, to cover a space not exceeding 40 feet super, for which a silver cup was offered as first prize, Mr. W. Ware, gardener to L. Walters, Esq., Woodhayes, succeeded in winning easily, the plants being exceedingly tall, but carrying blooms which were remarkable for high quality. Mr. W. Springthorpe, gardener to N. H. Alexander, Esq., Roehampton, was a good second; Mr. W. Luff, gardener to J. T. Schwann, Esq., Oakfield, Wimbledon Common, third. Mr. W. Thornton, gardener to T. E. Crocker, Esq., Draymont, with a capital plant of Golden Circle, won premier honours for a specimen Pompon. For a miscellaneous group of plants, not to exceed 40 feet super, Mr. Bradford, gardener to H. B. Wallace, Esq., was an easy first; Mr. W. Ware second.

Cut blooms were the most important feature of the Exhibition. The principal class was that for forty-eight blooms (twenty-four incurved in not less than eighteen varieties, and twenty-four Japanese, distinct), a challenge cup value fifteen guineas being offered for the first prize, for which five competed. Mr. Mease, gardener to F. Tate, Esq., Downside, Leatherhead, was placed first with superior incurved blossoms and good Japanese, the varieties being as follows:—Back row: Princess of Wales, Lord Alcester, Golden Queen of England, Jeanne d'Arc, Lord Alcester, Bronze Queen, Golden Queen of England, Golden Empress. Middle row: Mrs. S. Coleman, Violet Tomlin, Princess of Wales, Miss M. A. Haggas, Mrs. S. Coleman, Golden Empress, Mrs. Heale, John Salter. Front row: Mrs. W. Shipman, Mrs. N. Davis, Cherub, Violet Tomlin, Empress Eugénie, Lady Dorothy, Hero of Stoke Newington, C. Gibson. The Japanese were—Back row: Edwin Molyneux, Stanstead White, Madame J. Laing, R. Brocklebank, T. de la rue des Chalets, Mrs. W. Clark, Puritan, Etoile de Lyon. Middle row: Saran Owen, W. W. Coles, Mrs. Cannell, W. Wheeler, Condor, H. Cannell, Mrs. Irving Clark, Gloriosum. Front row: G. Daniels, M. Marrouch, Mons. H. Elliott, Sunflower, Meg Merrilies, Thunberg, Avalanche, Stanstead Surprise. Second, Mr. C. Beckett, gardener to C. H. Bryant, Esq., Twickenham, with larger incurved but somewhat stale, the Japanese being of superior quality. Mr. C. Gibson, gardener to J. Wormald, Esq., Morden Park, Mitcham, third.

For twelve incurved and twelve Japanese, distinct, Mr. C. Gibson was an easy first, staging flowers of good quality, the varieties being Miss Haggas, Golden Empress, John Salter, Golden Queen of England, Cherub, Princess of Wales, Princess of Teck, Mrs. S. Coleman, Empress Eugénie, Princess Beatrice, Nil Desperandum, and Violet Tomlin. Japanese: E. Molyneux, Boule d'Or, Val d'Andorre, Etoile de Lyon, Lady Lawrence, Mrs. F. Jameson, Maiden's Blush, Meg Merrilies, Sarah Owen, Mrs. C. Wheeler, Grandiflorum, and J. Délaux. Second, Mr. Alderman, gardener to G. Hatfield, Esq., Morden Hall, Mitcham, somewhat smaller; the last named succeeded in winning premier honours for twelve incurved, distinct, with medium sized neat blooms. Second, Mr. W. Palmer, gardener to the Right Hon. Hume-Dick, Thames Ditton House. The same two exhibitors occupied similar positions for twelve

Japanese, distinct. For six incurved, Mr. J. Portbury, gardener to W. M. Fry, Esq., Ripon House, Putney Heath, was first with a neat lot. Mr. F. Bentley, gardener to Sir T. Gabriel, Bart., Wimbledon Park, second. For six blooms of reflexed varieties, Mr. C. Gibson was distinctly first, having substantial blooms of Golden and Pink Christine, and Cloth of Gold. Mr. G. Woodgate, gardener to Lady Wolverton, Warren House, Kingston-on-Thames, was a close second. The last named was placed first for six large Anemones. Mr. C. Gibson second.

Table plants, Cyclamens and berried plants, fruits and vegetables, made up a good Show.

LEICESTER AND MIDLAND.—NOVEMBER 14TH AND 15TH.

THE fourth annual Show of this young and flourishing Society was held on the above dates in the Temperance Hall, Leicester, and proved to be the best yet seen in the town of Leicester.

Groups of Chrysanthemums arranged for effect were not numerous, there being three competitors only, and unfortunately two of these lost all chances of success, and were disqualified by the Judges for having used cut flowers and stems to enhance the effect of those growing in pots. The first prize was, however, awarded to a very tastefully arranged group, containing good flowers and well grown plants, exhibited by Messrs. J. & H. Hickling, nurserymen, Loughborough, which was much admired by visitors. Four specimen plants of white-flowered Chrysanthemums occupied a conspicuous position in the centre of the orchestra, one of them being a very large example upwards of 6 feet in diameter, these being shown, not for competition, by Mr. John Mawby, Humberstone Road Nurseries.

Cut Blooms.—In the open class for forty-eight cut blooms, twenty-four incurved and twenty-four Japanese, not less than eighteen varieties in each class, first prize £10 and a silver challenge cup value £10, second prize £5, third £2 10s., Mr. John Lambert was placed first in an exceedingly close competition with very fine and even stands, containing, of incurved—Back row: J. Lambert, extra good; Queen of England, Golden Empress, fine; Empress of India, Alfred Salter, Golden Empress, Lord Alcester, and John Lambert. Middle row: Mrs. Coleman, Princess of Wales, Violet Tomlin, Queen of England, Lord Wolseley, Jeanne d'Arc, Mrs. Heale, and Empress of India. Front row: Refulgence, Princess Teck, Barbara, John Salter, Miss Haggas, Hero of Stoke Newington, Lady Dorothy, and Lady Hardinge. Japanese.—Back row: Etoile de Lyon, fine; Criterion, Belle Paule, Mrs. Wheeler, Sunflower, E. Molyneux, Mons. Bernard, and Etoile de Lyon. Middle row: Val d'Andorre, Condor, Gloriosum, Thos. Stevenson, Madame J. Laing, Eynsford White, Mrs. Jameson, and Boule d'Or. Front row: R. Brocklebank, Sarah Owen, Madame Baco, Avalanche, J. Délaux, Golden Dragon, Mons. Brunet, and W. W. Coles. In this class Mr. P. Blair, Trentham Gardens, was placed second; and Mr. J. Myers, Huntingdon, third.

For twenty-four blooms, open class, twelve incurved and twelve Japanese, distinct varieties, Messrs. E. Plowman & Sons were deservedly placed first with exceedingly fine stands, the Japanese especially being fine highly coloured flowers of great size and depth, the varieties being—Incurved: Queen of England, Golden Queen, very fine; Violet Tomlin, fine; Lord Alcester, Empress Eugénie, Princess of Wales, Miss Haggas, fine; Prince Alfred, Mrs. Coleman, Nil Desperandum, Mrs. Shipman, John Salter, fine. Japanese: Etoile de Lyon, fine colour; Stanstead White, Madame Baco, Edwin Molyneux, Mrs. Wheeler, Jeanne Delaux, Avalanche, Mr. H. Cannell, Sunflower, Meg Merrilies, Mons. Bernard, and Belle Paule. Second, Mr. A. Coombes, gardener to Earl Dudley, Himley Hall. Third, Messrs. J. & H. Hickling.

In the district class for twenty-four blooms, twelve incurved and twelve Japanese, distinct (silver cup value £5), Mr. J. Read, Aylestone Park, was first with even and good blooms, his varieties being—Incurved: John Lambert, Golden Empress, Queen of England, Lord Alcester, Princess of Wales, Lord Wolseley, Empress of India, Jeanne d'Arc, John Salter, Princess of Teck, Nil Desperandum, and Mrs. Coleman. Japanese: Sunflower, Val d'Andorre, Boule d'Or, Etoile de Lyon, Madame C. Audiguier, Avalanche, Mons. Bernard, Gloriosum, Mdle. Lacroix, Jeanne Délaux, Ralph Brocklebank, and Belle Paule. Mr. F. H. Anthony, Hon. Sec., was placed second, and had a very fine stand of Japanese, in which the following were most remarkable: Etoile de Lyon, a fine deep coloured flower; W. W. Coles, very fine; Mrs. Alpheus Hardy, not quite up, but a large deep flower, showing well its hairy character, one of the finest yet seen of it; and Sokoto, a good flower of a bright yellow American variety. Mr. Johnson, gardener to Mr. W. Billson, Berkley, was third.

For twelve blooms, incurved (amateurs residing within five miles of Leicester).—First, J. Read. Second, G. A. Jayes. Third, J. Whait. Fourth, C. Day. Six blooms, incurved (first prize £1 and silver Centenary medal).—First, Mr. F. H. Anthony, with fine flowers of John Lambert, Alfred Salter, Lord Alcester, Mrs. Coleman, Golden Empress, and Princess of Wales. A corresponding class for six Japanese was also won by Mr. Anthony with splendid flowers of Etoile de Lyon, large, finely coloured, best in the Show; Meg Merrilies, E. Molyneux, Boule d'Or, Sunflower, and Avalanche. A new and valued feature in this season's Exhibition was the spirited competition for a series of working men's prizes given by Thos. Brookes, Esq., Barkby Hall, for competition for working men residing within five miles of the Clock Tower, Leicester. Some very good flowers were shown by exhibitors in this class.

There was a fine display of baskets of flowers, bouquets, &c., Messrs.

Perkins & Sons, Coventry, being the principal prizewinners. Much prize is due to the Hon. Sec., Mr. Anthony, for his admirable arrangement of the Show, and to his colleagues upon the Committee for so ably seconding his efforts.

WINCHESTER.—NOVEMBER 13TH AND 14TH.

THE Guildhall in this city where the autumn Exhibition of Chrysanthemums, fruit, and vegetables was held is especially adapted for the purpose, the large hall being well lighted, which adds to the appearance of the flowers considerably, and the place is easy of access. The Exhibition under notice was above the average of previous displays, the competition in nearly all classes being keen, and the quality of the leading exhibits highly creditable. The arrangements were, as usual, under the direction of Mr. Chaloner Shenton, the Hon. Secretary, and it is needless to say that anything better could not be desired. Mr. Shenton has worked well in the interest of this society, and is moreover a successful amateur cultivator, and we have much pleasure in giving his portrait (fig. 62).

The principal interest centred in the cut bloom classes, as many as 850 blooms being staged, the chief class being that for forty-eight, half



FIG. 62.—MR. CHALONER SHENTON.

the number to be incurved in not less than eighteen varieties, or not more than two of one sort, the same conditions applying to the Japanese section, the first prize being the challenge cup, given by the ladies of Winchester, to which is added a money prize of £5, and for which five entered. Mr. N. Molyneux, gardener to J. C. Garnier, Esq., Rooksbury Park, Wickham, Fareham, was placed first with good sized, even, and fresh incurved blooms, admirably finished. The Japanese were lighter, but wonderfully fresh and bright, the varieties being as follows:—Incurved.—Back row: Golden Empress (two), Empress of India (two), Queen of England (two), Lord Alcester, Golden Queen of England. Middle row: Empress Eugénie, John Doughty, Golden Queen of England, Hero of Stoke Newington (two), Lord Alcester, Lord Wolseley, Jeanne d'Arc. Front row: Prince Alfred, Mrs. Norman Davis, Lady Carey, Miss M. A. Haggas, Lady Dorothy, Princess Teck, Alfred Salter, Barbara. Japanese.—Back row: Etoile de Lyon (two), Eynsford White, E. Molyneux (two), Carew Underwood, Mrs. F. Thompson, Stanstead White. Middle row: Stanstead White, Mrs. F. Jameson, M. E. A. Carrière (two), J. Délaux, Belle Paule, Mrs. C. Wheeler, Mons. Bernard. Front row: Boule d'Or (two), Mdle. Lacroix, Mons. Bernard, Ralph Brocklebank, Sarah Owen, Sunflower, Meg Merrilies. Messrs. W. & G. Drover, The Nurseries, Fareham, were second, the incurved being smaller and not so fresh, the Japanese being heavy. Mr. G. Trinder, gardener to Sir H. Mildmay, Dogmersfield Park, Winchfield, third.

For twenty-four Japanese, not less than twelve varieties, seven competed. Mr. Trinder, who won first honours, put up very strong blooms remarkable for their freshness and brightness of colour, the most important sorts being Mrs. C. Wheeler, Etoile de Lyon, Sunflower, M. H. Elliott, Stanstead Surprise, and Madame J. Laing. Mr. J. Inglefield, gardener to Sir J. Kelk, Bart., Tedworth, Marlborough, second, very close; Messrs. Drover third. For twelve incurved, distinct, Mr. N. Molyneux easily secured the premier award with blooms possessing much quality and superiority in finish, the sorts being Golden Empress, Queen of England, Golden Queen of England, Empress of India, Hero of Stoke Newington, Lord Alcester, Lord Wolseley, Empress Eugénie, Lady Dorothy, Baron Beust, Princess Teck, and Barbara. Messrs. Inglefield and Trinder followed in the order of their names.

For twelve Japanese, distinct, Mr. Budd, gardener to F. Dalgety, Esq., Lockerby Hall, Romsey, was an easy first with fairly good blooms in each case. For twelve Anemone sorts Mr. Neville, gardener to F. W. Flight, Esq., Cornstiles, Twyford, Winchester, was placed first with even, large, well-centred flowers. For twelve reflexed, in not less

than eight varieties, Mr. Allen, gardener to Capt. the Hon. Victor Montague, Wherwell Priory, Andover, with an even stand of blooms secured leading position—Cloth of Gold, Golden Christine, Distinction, and Callington. Mr. Neville second, and Mr. Budd third. For twenty-four blooms, irrespective of distinctness of kinds, Mr. E. Wills, gardener to Mrs. E. Pearce, The Firs, Bassett, took premier award, followed by Mr. T. Annals, gardener to C. Shenton, Esq., Golden Common, Winchester. The same two exhibitors maintained the same position in the class for twelve blooms.

Groups of Chrysanthemums arranged in a space 8 feet by 7 feet made a good display around the sides of the hall, and manifested a great improvement in the quality of the plants during the last two or three years. Mr. F. Smith, gardener to Lady Wodehouse, Mayfield, Winchester, with plants carrying well-developed blooms, and neatness of arrangement having been well considered, was a good first. Second, Mr. J. Wareham, gardener to Mrs. Gunner, Winchester; Mr. E. Carr, gardener to W. A. Gillett, Esq., Fair Oak Lodge, Bishopstoke. Five competed. Specimens trained showed a falling off in point of numbers and quality as compared with other years. In the present case Mr. J. Kaines, Winchester, was easily first. For a single specimen Japanese Mr. Wills, with Stanstead Surprise, a neat plant; and with Dr. Sharpe in the incurved or reflexed class Mr. Wills was again successful. Mr. G. Best, gardener to C. W. Chute, Esq., Basingstoke, had the best table plants, a neat lot. Mr. Carr had the best arranged group of miscellaneous plants. The most tastefully arranged stand of Chrysanthemums and other flowers with grasses, suitable for table decoration, Miss Agnes Flight, Cornstiles, Twyford, Winchester, was distinctly first with a light yet choice arrangement. In a similar class with hardy shrubs, Ferns, and grasses of outdoor growth, Miss Flight was awarded principal honours with a rich but not a heavy arrangement. Miss N. Owen, Basingstoke, second in both classes. Primulas made a good show, many well-grown plants being staged. For twelve plants, any variety, Mr. F. Munt was placed first; Mr. T. Lowndes, gardener to F. C. Burch, Esq., Winchester, second. Fruit also constituted a good display, the principal prizetakers being Mr. C. Warden, gardener to Sir F. Bathurst, Clarendon Park, Salisbury; Mr. S. Hall, gardener to S. Montagu, Esq., South Stoneham House, Southampton; Mr. Budd; Mr. F. Cawte, gardener to W. Cotesworth, Esq., Winchester; Mr. Inglefield; Mr. J. Amys, gardener to the Hon. Mr. Yorke, Hamble Cliff, Southampton. Vegetables formed a strong display. Mr. Inglefield was first among seven others, Mr. G. Best second, and Mr. Allen third.

SHEFFIELD, HALLAMSHIRE, AND WEST RIDING.

NOVEMBER 14TH AND 15TH.

THIS Exhibition proved to be the most successful yet held in Sheffield. For many previous seasons there have been two Societies, each holding a separate Show within a few days of the other. Early, however, in the present year the two Committees met together and resolved to combine, and hold one large Show instead of two as formerly. The result has been more satisfactory than could have been expected, and the Show, in the quantity and high quality of the exhibits, was a surprise to all. The spacious floor of the Corn Exchange, which has in previous years been found larger than was required, was this year totally inadequate to contain all the exhibits, many of which had to be staged in adjoining rooms. In several of the numerous classes provided for six and three blooms (amateurs' and cottagers' classes) there were from twenty-five to thirty competing for the eight prizes offered, and as the competition was very close the work of judging, especially after the visitors were admitted, proved to be no sinecure.

In the open class for twenty-four incurved blooms, eighteen varieties, there were seven competitors. Mr. J. Lambert, gardener to Col. Wingfield, Onslow Hall, Shrewsbury, was first, his flowers being—Back row: Lord Alcester, Golden Empress, Alfred Salter, John Lambert, Queen of England, Empress of India, Alfred Salter, John Lambert. Middle row: Mrs. Heale, Hero of Stoke Newington, Mrs. Heale, Lady Dorothy, Miss Haggas, John Salter, Jeanne d'Arc, Violet Tomlin. Front row: Lady Dorothy, Miss Haggas, Princess of Teck, Prince Alfred, Barbara, Prince Alfred, Mrs. Coleman, Cherub. Mr. P. Blair, Trentham Gardens, was placed second, his back row blooms being very fine, but he had several small and inferior flowers in his front rows. Mr. J. Hathaway, gardener to the Earl of Latham, Ormskirk, was third, and Mr. C. Green, gardener to Sir H. E. Watson, Shirecliffe Hall, Sheffield, fourth.

In the corresponding open class for twenty-four Japanese, eighteen varieties, there were eleven collections staged, all of very high merit, making a wonderfully fine display. Mr. A. Coombes, gardener to the Earl of Dudley, Himley Hall, Dudley, was placed first with a fine lot of large solid blooms, very bright in colour and fresh. The varieties were—Back row: Mons. Bernard, Mdle. Lacroix, E. Molyneux, Sunflower, E. Molyneux, Thunberg, Avalanche, M. Bernard. Middle row: Stanstead White, Mrs. Jameson, Avalanche, Etoile de Lyon, Mdle. Blanche Pigny, Etoile de Lyon, Puritan, Sunflower. Front row: Madame J. Laing, Thunberg, W. W. Coles, Gloriosum, Mr. J. Laing, Mrs. J. Wright, Sarah Owen, Madame Baco.

For twelve incurved (open class), Mr. J. Lambert was again first, his varieties being—Lord Alcester, Alfred Salter, Empress of India, John Lambert, Princess of Wales, Mrs. Coleman, Charles Gibson, Queen of England, Mabel Ward, Princess Teck, Jeanne d'Arc, Violet Tomlin.

For twelve Japanese, open class, Mr. W. Welton, gardener to Mr. G. A. Green, Marsham Lane, Grimsby, was first, his varieties being Stan-

stead White, E. Molyneux, Sunflower, Condor, Val d'Andorre, Mons. Astorg, Comtesse de Beauregard, Mons. J. M. Pigny, Gloriosum, Criterion, W. Holmes, and Japonais.

In the district class for twelve incurved, Mr. S. Gilbey, gardener to B. B. Bootle, Esq., Page Hall, Sheffield, was first with fine plants, comprising Golden Empress, Lord Alcester, Golden Queen, Empress of India, Princess of Wales, Mrs. Heale, Queen of England, Miss Haggas, Prince Alfred, J. Salter, Refulgence, Guernsey Nugget. Twelve Japanese, district class.—First, Mr. C. Scott, gardener to Mr. J. Colley, Sharrow House, Sheffield. Varieties: Etoile de Lyon, Ralph Brocklebank, E. Molyneux, Boule d'Or, Sunflower, Mrs. Wheeler, Avalanche, Belle Paule, C. Wagstaff (?), Jeanne Delaux, Criterion, Mr. Jno. Laing.

In the amateur classes for cut flowers all the first prizes were taken by Mr. Jas. Harrison, 107, Hoole Street, Walkley, who exhibited throughout remarkably fine large blooms, fully equalling in size, depth, and solidity those in the open classes. The same exhibitor was placed fourth in the open class for twenty-four Japanese, with what were probably the largest and heaviest blooms in the Show, but which lacked brightness of colour and general freshness. Groups of Chrysanthemums and of miscellaneous plants were numerous and generally good, especially those of the latter character. The first prize group of Chrysanthemums, shown by Mr. Redmill, gardener to Mr. Lowood, Five Oaks, Sheffield, was tastefully arranged, very bright, and greatly admired.

The classes for miscellaneous plants and Ferns were numerous and well filled. Especially fine were British Ferns from Mr. Jno. Eadon and Mr. Newsham, trained Chrysanthemums from Mr. Scott and Mr. Green, Filmy Ferns from Mr. Newsham, Primulas from Messrs. Redmill and C. Scott, Epiphyllums and Selaginellas from Mr. Speight, Mignonette from Messrs. W. Collier, C. Scott, and W. Redmill. There were twelve competitors for the prizes offered for Grapes, black and white, the result being a long table filled with a fine display of fruit, the quality throughout being very good. The general arrangements and working of the Show were most efficiently and satisfactorily carried out by the Secretaries, Messrs. W. Housely and W. Marshall.



HARDY FRUIT GARDEN.

NECESSITY FOR PLANTING YOUNG TREES.—Those who defer planting young trees till the old ones give signs of failing health frequently make a great mistake. It is true much may be done in the way of renovating the borders and root-lifting towards restoring the apparently worn out old ones to a healthy profitable state, but on some soils whole limbs are liable to die off quickly, the rest of the tree not unfrequently following. This leaves a great blank, which it takes several seasons to refill, and unless therefore young trees are planted in anticipation of these failures much valuable time may be lost and good space wasted. Apricots, and next to these Plums, Cherries, Peaches and Nectarines, are the most liable to fail, and a few young trees of these might well be prepared between the old ones ready to take their place if need be.

CHANGE OF VARIETIES.—In all cases where the selection of varieties is not a good one or unsuitable to the requirements or peculiarities of the place, a change ought gradually to be made. To a certain extent this might be accomplished by re-grafting the trees, but as a rule the better plan is to purchase a stock of young trees, these being planted between the old ones, and the latter cut away according as the young trees require more room. The change will, in this manner, be accomplished without the loss of a season. It is not merely Apples and Pears that in very many cases are in need of improvement as regards variety, but a better selection of Peaches, Nectarines, Apricots, Plums, Cherries, Gooseberries, Currants, and Raspberries might well be made, some of the older forms of the three latter especially scarcely being worth garden room.

WHAT TO AVOID.—Admirable selections have of late years been frequently given in the pages of the *Journal of Horticulture*, and intending planters will do well to carefully refer to their back numbers. An unlimited number of varieties is not to be recommended, and if several or many trees of a few of the best sorts are planted these will most probably give far greater satisfaction than fewer trees each of a long list of varieties. Nor are cheap trees to be commended, these very frequently being much the dearest in the long run. Large numbers of fruit trees are annually exported from Holland, Belgium, and France to this country, many of them finding their way into the open markets of provincial towns, and are sold surprisingly cheap. Still more are cleared out from the home nurseries, these being bought up by hawkers and sold for very low prices. These, being varieties for which there is no demand, are dear at any price. All are fine strong trees, but a long exposure to cold drying winds, coupled with the loss of many strong roots when they were dragged out of the ground, gives a very severe check, from which they are a long time recovering from, many perishing outright.

WHAT TO ORDER.—Intending planters ought to decide early what

they require, and to order the trees before the best of the favoured nurseryman's stock is already sold. The sooner, too, the trees are lifted and replanted after the leaves are fallen the better. Supposing a good number of trees are required the gardener ought to pay a visit to the nurseries and select for himself. If he is wise it is not the strongest trees that will be selected, but rather those of medium strength and vigour, the wood being well ripened. Such recover the most quickly from the check of removal, and are the first to attain a fruitful state, and eventually form the best trees. These should also be asked for by those sending their orders to nurserymen, and will be sent by the latter if they have them in stock. Maidens, or those that have had one clear season's growth from the time the stocks were either budded or grafted, are the cheapest, and from these the healthiest and best trees are grown; but trained trees, or those that have been cut back two or three times, are naturally the first to reach a fruitful state. Some varieties naturally commence bearing much sooner than others, but the precocity of Apples and Pears in particular is largely effected by the stock on which they are worked. For dwarf or bush trees of the former experts give the preference to those on the Broad-leaved Paradise stock, these growing well in spite of their early productiveness. Standards or orchard trees are best on the common or Crab stock. Pears are principally grown on either the Quince or the natural or Pear stock. The former is best for shallow soils, and in all cases where early productiveness rather than large trees is desired. With a moderately deep and good root run those on the Pear stock develop into fine productive trees in the course of a few years, and these should be planted against high walls or wherever there is plenty of head room. In respect to the other fruit trees there is not much choice in the matter, the Musclem Plum being largely used as the stock for Plums, Peaches, Nectarines, and Apricots, and either the Mahaleb stock or seedlings for Cherries.

REPLANTING YOUNG TREES.—Those nurserymen who study the interests of their customers, and therefore their own as well, will see that the trees are not dragged from the ground in a reckless manner, and that the roots are not either long exposed to drying winds or are badly bruised in any way before they leave the packing sheds. Much depends upon this little attention, and careless labourers ought not to be employed in such important work. The roots of the trees packed in bales should be well surrounded and mixed with moist strawy manure, this keeping them plump and fresh till they are once more in the ground. Any not so treated, and the roots of which give signs of having been unduly exposed, might with advantage be immersed in a tank or pool of water for a few hours prior to planting. Never attempt planting if the soil is in a wet pasty state. Better by far to lay the trees in by the heels till the work can be done properly. Never prepare the stations far in advance of planting time, or they are liable to become badly saturated by rain. Fresh loamy soil, turfy if possible, suits all kinds of fruit trees well, and it is advisable to plant rather above the ordinary garden level.

FRUIT FORCING.

VINES.—*Earliest Forced Vines in Pots.*—The earliest started will now be showing signs of growth, so that the temperature may be slightly increased—55° minimum, and 65° maximum from fire heat, with 10° more from sun heat, proportionately increasing the atmospheric moisture. Very little ventilation will be required, and what is given should be at the top of the house; if side ventilation be given the cold air should pass over the heating surface so as to become warmed.

Houses Cleared of Grapes.—When the Vines are leafless and the Grapes cut attend to the pruning. If the Vines are strong, having stout short-jointed wood, they may safely be pruned to a couple of eyes. If, however, the base buds are small, and the Vines from similar buds in previous years gave as large bunches as desired, the laterals may be left a little longer, but it is necessary that a round, not flat bud, well developed, be selected for pruning to, aiming at a close compact bunch of well set berries with a stout footstalk in preference to a large uneven bunch, which usually follows large flat buds on long-jointed wood, the foliage supporting such being large, thin, and incapable of elaborating the food and concentrating it in the buds at their base. Avoid pointed buds, they usually are not productive of bunches, and if they are the bunches have a tendency to revert into tendrils. Wash the house thoroughly and cleanse the glass. Remove only the loose bark, avoiding the usual scraping. Tepid soapy water, soft soap 4 ozs. to the gallon of water, is unquestionably the best means of cleansing the Vines, using a brush with care and judgment, following with an approved insecticide. Remove the mulching or loose surface material down to the roots, and place on a couple of inches of fresh loam mixed with some old mortar rubbish passed through a three-quarter-inch sieve, night soil, and wood ashes. If the loam be light add some clay marl dried and reduced to powder. Of turfy loam, cut 3 inches thick and chopped moderately small have 20 bushels, of sifted old mortar rubbish add 2 bushels, of night soil 1 bushel, soot half a bushel, wood ashes 1 bushel, clay marl (if the loam be light) 2 bushels, and 1 bushel steamed bonemeal. Charcoal dust may be added to the extent of 4 bushels, together forming a chaldron, when thoroughly incorporated, of dressing for Vine borders, good alike as a rooting and feeding area. The early watering will wash the assimilated matter down to the roots, and fresh feeders encouraged into it can be kept there by surface dressings or mulching with manure after the Grapes are set, feeding with liquid as necessary. If the houses must be used for plants they should be kept cool, admitting air freely, not exceeding 40° to 45° by artificial means. It is best, however, to dispense with the plants, admitting air freely in all but very severe weather, a few degrees of frost doing the Vines no harm, but insuring more complete rest.

Houses of Thin-skinned Grapes.—Black Hamburgs damp in a close confined atmosphere, which should be avoided by judicious ventilation. Madresfield Court keeps well until the end of November or later, but it loses colour perhaps more than Black Hamburg. Black Hamburgs well ripened will keep until January, particularly when ripened in late August or early September, the flesh being firmer, rich, and sugary, Foster's Seedling being a good companion white sweet Grape, both keeping wonderfully well. These early ripened thin-skinned Grapes are not so juicy as those ripening in September, which still have foliage, and keep the colour of the Grapes better than early ripened. They will also keep sounder with more moisture than those ripened in August, and a moderate amount of air moisture is necessary to prevent undue evaporation, the shrinking of the Grapes, it not being so much air moisture as a stagnant atmosphere that is fatal to the keeping of Grapes. Slight heat in the pipes will be required constantly to maintain an equable temperature, but this must not be high, or it will cause the berries to shrivel prematurely, 50° not being exceeded by artificial means, ventilating freely and early in bright weather, so as to prevent moisture being condensed by the berries. The outside borders must be protected from rains by shutters or other material, inside borders being covered with clean dry straw to prevent moisture rising, and it prevents the soil cracking.

MELONS.—Fruits on the latest plants are beginning to net, and will be ripe in December. To swell them off they require a rather moist genial condition of the atmosphere, damping the house in the morning and early afternoon, admitting a little air early in the forenoon to insure the dispersion of moisture and induce evaporation from the foliage. Maintain the night temperature at 60° to 65°, 70° to 75° by day artificially, advancing as much as can be had after the sun passes the meridian. The plants should have liquid manure about once a week. Plants that set their fruit early in September are ripening. The house should have air constantly and a temperature of 70° to 75°, with as much more as can be accorded by day, husbanding the sun heat, but not closing the house, withholding water from the atmosphere and roots. Fruit though not of high flavour proves acceptable from variety at Christmas or even later.

CUCUMBERS.—Continued firing dries the atmosphere more than is good for their foliage, the fruits becoming stunted and swelling indifferently, and when the pipes are close to the roots the soil is dried too much for healthy growth. Be careful in ventilating, providing it, however, whenever a favourable opportunity offers, but exclude air when the external atmosphere is sharp and cold. In bright but cold weather turn off the top heat when the sun is powerful and likely to raise the temperature above 80° in such weather, damping the house morning and afternoon, closing early. Care must be taken in damping so as not to wet the embryo fruits, as they will damp off if water remain on them or hang from their points for any little time. Water will be required at the roots about twice a week. Maintain a temperature of 60° to 65° at night and 70° to 75° by day.

Winter fruiters, or plants from August or September sowings, having grown to the extent of the trellis, should not be allowed to fruit for a few weeks unless they are unduly vigorous and there is a pressing demand for fruit. Attend frequently to stopping and tying, thinning, avoiding overcrowding and overcropping as the two greatest evils, subduing canker at the collar with quicklime well rubbed into the affected parts, removing every decayed leaf and bad growth promptly. If mildew appear, dust with flowers of sulphur, it being well to dust some over the plants with a view to its prevention. Aphides should be destroyed by fumigation with tobacco, being careful not to give too much. It is best to fumigate on two or three consecutive evenings, or preferably follow the evening with early morning fumigation.



* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Sonerilas (J. H.).—To have pans and pots of these in good condition cuttings may be inserted in succession. They root freely in the

propagating frame in sandy soil, or, better still, all sand. They may be inserted thickly together in pots or pans, and transplanted into others when rooted. They flourish in any stove where the atmosphere is close and moist, if a shady position is found for them. They are effective growing amongst the moss in pots of Vandas, Acridas, and other Orchids of a similar nature.

Fittonias (*Idem*).—A few good pans of these are effective in the stove, and should find a place where the object is to maintain this structure attractive throughout the season. For this purpose insert cuttings at once. They root freely in any close, moist, and shady position if placed amongst chopped sphagnum moss and sand. When well rooted plant them in the pans in which they are to grow. They are most effective when well elevated in the centre. They grow luxuriantly in the compost advised for Bertolonias. Where small plants for various forms of decoration are in demand few surpass these in beauty when mixed with Mosses and small Ferns.

Thrips on Ferns (*E. F. C.*).—You cannot smoke too soon. Do it gently, yet fill the house with smoke. Do this two nights in succession, syringing the plants the morning after each smoking. You must have the foliage dry before smoking, though you may and ought to sprinkle every available surface with tepid water twice daily, taking care not to wet the fronds. This will surcharge the atmosphere with humidity or moisture, and that is what Ferns require.

Heating Power of Conical Boiler (*J., Old Subscriber*).—The heating power of a boiler the size you name is equal to about 120 feet of 1-inch piping, but as you only require it to exclude frost or maintain a temperature of 45° we think it will be sufficiently powerful to heat both structures; but you say nothing as to the size of the houses. If ordinary lean-to's of 10 to 12 feet width the water will not require to be kept very hot in a flow and return pipe running the whole length of the structure to maintain the temperature required in severe weather, and in that case your boiler will answer, not otherwise. There is no occasion whatever to move the boiler, as the water will circulate as freely one way as another. The sideways may be used in the manner you propose, making sure that one is a flow and the other a return socket. Keep the piping in both houses as near as possible on the same level to insure the water circulating uniformly.

Fuchsias from Seed (*S. T. R.*).—We have raised many hundreds of plants from seed, but few of them on flowering proved equal to existing varieties; still the pursuit is interesting to amateurs who desire to have something new of their own raising. The pods should be carefully gathered when ripe. As the seeds are enveloped in a pulp it is necessary, in order to preserve them, to cleanse them effectually. This is done by washing; bruise the berries with the hand, and mix them with water; as soon as the pulp is all washed off pass the liquor through a hair-sieve fine enough to catch the seed, wash it repeatedly till it is quite clean, then dry it gradually; put it up in brown paper, and keep it in a dry room till spring. Sow now in a mixture of light sandy loam and peat, cover slightly, and place the pots in a gentle hotbed. When the seedlings are half an inch high transplant them in rows across pots 3 inches wide—these will hold about twenty or thirty plants each—and then replace them in the hotbed. In these pots they may remain for a month or six weeks, and then they will require placing singly into 3-inch pots. Place them for a few days in a cold frame, and keep pretty close and shaded till fresh roots are formed, and then they are then able to bear the full light, and a moderate admission of air. Give plenty of the latter as they acquire strength, and when the pots are full of roots give another shift into 4-inch pots, and let them remain in these till they flower. Many of them will flower the first year, and then is the time to make a selection. The selected ones should be repotted, and grown to the end of the season to prove them. Cuttings of the best may be inserted, and the whole kept in the coolest part of the greenhouse during the winter.

Profitable Flowers (*J. T.*).—There is a good demand for Bouvardias, but by far the best prices are obtained in provincial towns. The London markets would appear to be well supplied with them, large quantities being grown in Kent and Sussex especially, and as a consequence prices are low, from 3d. to 6d. per dozen sprays being all that can be obtained. Unless exceptionally well grown, whole houses being given up to them for a few weeks, they do not pay well at the London prices, but in the principal provincial towns it not unfrequently happens the prices range from 1s. to 2s. per dozen, and in this case Bouvardias are decidedly profitable. The doubles are the best for the purpose, as although the singles are the most beautiful they are not serviceable enough for the markets. The two favourites are A. Neuner (white) and President Garfield (pink), and a trial might well be given to Thomas Meehan (double scarlet) and Victor Lemoine (bright scarlet), this also being a double-flowering variety. For local purposes we can recommend Vreelandi (pure white), Candidissima (an improved Jasminoides), Dazzler (rich scarlet), and the newer President Cleveland (bright scarlet), these being very floriferous single varieties. If not unduly shaded by the Maréchal Niel Rose, an intermediate temperature being maintained, the Bouvardias would succeed far better than semi-double Zonal Pelargoniums, the latter, though flowering freely in heat, being most impatient of shade. For the markets you cannot have any better Pelargoniums than F. V. Raspail and La Cygne, the demand being greatest for these at Christmas, any scarlet and white flowers selling well at that time.

Barilla (*G. B.*).—The plant to which you refer bears the name of Salsola or Halogeton sativus, which was grown extensively at one time

for the production of soda salts. "In the cultivation of the plant the seed is sown in January and February in the same manner as other ordinary seeds, and requires no special care. The seed becomes worthless if not sown the season following its collection. The plant is gathered in August. It is pulled up by the root, spread for two or three days, and then collected in small conical shaped piles, so that in case of rain the water may not penetrate so much into the interior and rot the plant. It is left thus about a month to thoroughly dry. If not then required to be burnt it is stacked and covered with esparto or rush to preserve it. The manufacture of Barilla is carried out as follows:—A hole is dug out in the form of a large round earthenware pot, about 1½ foot in diameter at the mouth, about 4 feet at the bottom, and depth about 3½ feet, the inner part of which is well beaten, and then covered with a slight smooth coating of mud. A small quantity of wood is then burnt to ashes in this hole to dry and heat it, when it is cleaned out and a couple of iron rods or bars are placed across the mouth, over which bars a quantity of the plant is placed and fired, more being added continually as it is consumed for about twelve hours. Then the bars are removed by means of a large, bent, two-prodded, wooden fork, the boiling substance in the hole is thoroughly stirred, till it becomes even and smooth on surface like molten lead; then the bars are replaced, and the same operation repeated until the hole is filled, when the entire mass is finally stirred as described. The mouth of the hole is then closed up, and the Barilla is left about a week to cool thoroughly, during which time it hardens and cracks into pieces. The hole has then merely to be dug around and the Barilla taken out."

Cannas in Pots (*B. D.*).—*C. iridiflora*, broadly acuminate leaves, the whole plant attaining to a height of 6 feet or more. Its flowers are Iris-like, large, rose coloured with a yellow spot on the lip; the spikes droop gracefully, several emanating from the same spathe. *C. iridiflora hybrida* has large blood red flowers, very effective, the foliage green and bold. It also attains to a height of 6 feet or more. *C. iridiflora Ehemanni*, immense foliage of an attractive reddish hue, flowers bright crimson, perhaps the noblest of all Cannas. *C. Bihorelli*, leaves red in a young state, changing to deep bronze with age, flowers deep crimson, very freely produced, height 5 to 6 feet. *C. gigantea major*, leaves green, petioles having a velvety down covering, flowers large, orange red or scarlet, very ornamental, height 6 feet. *C. nigricans*, dark bronze stems and foliage, red flowers, one of the finest, height 4 to 6 feet. *C. Annæi*, green glaucous foliage, flowers salmon. This is perhaps the most glaucous of all the kinds; height 6 feet. *C. Prémices de Nice*, an exact counterpart in foliage of *C. Annæi*, of which it may be a variety, flower large, bright yellow, height 6 feet. *C. zebrina*, fine deep green foliage, passing into dark red rayed with purple, stems dark violet red, in foliage very effective, flowers small, orange, height 6 feet. *C. musæfolia maxima*, fine large green Musa-like foliage with dark petioles, stately in contour, flowers orange red, height 4 feet. *C. grandiflora floribunda*, foliage dark, flowers large, red, freely produced, height 3 to 4 feet. *C. Van Houttei*, foliage green, rayed and margined purplish red, flowers large, scarlet, and very freely produced; height 3 to 4 feet. *C. Chatei sanguinea*, leaves ovate elliptic, deeply tinged purple, red flowers, height 3 to 4 feet. *C. nobilis*, leaves rayed and margined red, flowers red, height 3 to 4 feet. The two last are undoubtedly varieties of *C. Warszewiczii*, dark foliage, blood red flowers, height 3 feet. There are many other fine species and varieties, but commencing with *C. iridiflora Ehemanni*, probably thirteen choicer varieties do not exist for decorative purposes outdoors, being in respect of foliage and flowers highly effective. Cannas, however, need improvement in the direction of the flower in form, substance, and size; indeed, there is no reason why they should not be as remarkable for the beauty of their flowers as they are now for their unique grandeur of foliage and habit.

The Movements of Leaves (*J. J. R.*).—Spontaneous movements of leaves, or those in response to some direct irritation, are interesting. They have been subjected to close scientific study in the case of such as the *Dionæa* and *Droseras* with surprising results, the carnivorous plants having enjoyed a notoriety far exceeding the "Weather Plant." The infolding of the leaf lobes in the *Dionæa* when some substance is introduced is familiar to many now, as also is the rapid drooping of the Sensitive Plant leaves when touched. There is, however, an occupant of the stoves in some botanic gardens which displays a still more remarkable phenomenon in its leaves, and which is not nearly so well known. This is the Telegraph Plant, *Desmodium gyrans*, a member of the Leguminosæ, and a native of the East Indies, and by no means a novelty. Though Mr. Darwin and others have determined that most plants have a spontaneous motion in their growing stems and roots, these are so extremely gradual that they are not readily observed, and can only be tested by careful experiment. In the *Desmodium*, however, we have a spontaneous movement that is visible and strongly marked. The leaves consist of three leaflets, the centre one large, oblong, or elliptical, and at the base on each side is a small narrow leaflet, which possesses a peculiar property. When the plant is healthy and growing these leaflets rise alternately by a series of little jerks until they are nearly perpendicular, and then descend in a similar way, to resume their action when the other leaflet has gone through a similar process. This takes place without the application of external stimulant beyond that afforded by light or heat; the rapidity of the movement varies greatly, however, and in dull weather it is much reduced or ceases altogether, as it does when the plant becomes unhealthy or old. Sometimes the motion is confined to a few leaves, but it seems to depend chiefly on the age of the plant, the weather, or the conditions under which it is grown. In cold or a dry house it is much lessened, and does not continue so long.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. — (*John Callaghan*).—Pear Van Mons Léon Leclerc. Apples: 1, Royal Russet; 2, Blenheim Pippin. *James Grant*—1, Catillac; 2, Spanish Warden; 3, Marie Louise; 4, Not known; 5, Catshead; 6, Blenheim Pippin. (*J. M.*).—1, Court Pendu Plat; 2, Adams' Pearmain; 3, Lemon Pippin (true). The others we cannot identify; we suspect they are local varieties. (*Mrs. Drinkwater*).—Pears: No. 1, Beurré Diel; 3, Easter Beurré; 4, Beurré Superfin. Apples: A, Ribston Pippin; B, Not known. There was no No. 2 Pear. (*C. H. H.*).—The Pear is Gilgil.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*A Reader*).—We do not undertake to name florists' flowers, and if we did, the Chrysanthemum sent is not in sufficiently good condition to be recognisable. No. 1 is *Vinca rosea*; No. 2 is apparently an *Acalypha* leaf. (*J. R.*).—1, *Dendrobium nobile*; 2, *Cypripedium insigne*; 3, *Masdevallia Harryana*.

COVENT GARDEN MARKET.—NOVEMBER 19TH.

BUSINESS steady, with scarcely any alteration in prices.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, $\frac{1}{2}$ sieve	1	6	to	6	0	Lemons, case	20	0	to 28 0
" Nova Scotia and						Melons, each	1	0	2 0
" Canada, per barrel	15	0	26	0		Oranges, per 100 ..	4	0	9 0
" Tasmanian, p. case	0	0	0	0		Peaches, dozen	0	0	0 0
Grapes, per lb.	0	9	3	0		Plums, $\frac{1}{2}$ sieve	4	0	9 0
Kentish Filberts, 100 lbs.	0	0	0	0		St. Michael Pines, each..	2	0	6 0
" Cobs	65	0	70	0		Strawberries, per lb. ..	0	0	0 0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes, dozen	0	0	to	0	0	Mushrooms, punnet ..	1	6	to 2 0
Asparagus, bundle	0	0	0	0		Mustard & Cress, punnet	0	2	0 0
Beans, Kidney, per lb. ..	0	3	0	0		Onions, bushel	3	0	4 0
Beet, Red, dozen	1	0	0	0		Parsley, dozen bunches	2	0	3 0
Brussels Sprouts, $\frac{1}{2}$ sieve	1	9	2	0		Parsnips, dozen	1	0	0 0
Cabbage, dozen	1	6	0	0		Potatoes, per cwt.	3	0	4 0
Carrots, bunch	0	4	0	0		" New, per lb.	0	0	0 0
Cauliflowers, dozen	2	0	4	0		Rhubarb, bundle	0	2	0 0
Celery, bundle	1	0	1	3		Salsafy, bundle	1	0	1 6
Coleworts, doz. bunches	2	0	4	0		Scorzonera, bundle ..	1	6	0 0
Cucumbers, doz.	2	0	3	6		Seakale, per bkt.	2	0	2 6
Endive, dozen	1	0	0	0		Shallots, per lb.	0	3	0 0
Herbs, bunch	0	2	0	0		Spinach, bushel	1	0	2 0
Leeks, bunch	0	2	0	0		Tomatoes, per lb.	0	4	0 6
Lettuce, dozen	0	9	1	3		Turnips, bunch	0	0	0 4

CUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	4	0	to	8	0	Mimosa (Fench.), per bch.	0	9	to 1 0
Asters, per bunch, French	0	0	0	0		Narciss (Paper-white),			
" English, 12 bchs.	4	0	9	0		French, doz. bunches ..	4	0	10 0
Bouvardias, bunch	0	6	1	0		Do. Do. English,			
Carnations, 12 blooms ..	1	0	2	0		per bunch	1	0	1 6
Chrysanthemum, 12 blms.	1	0	3	0		Pelargoniums, 12 trusses	0	9	1 0
" 12 bunches	4	0	12	0		" scarlet, 12 bchs	4	0	6 0
Epiphyllum, doz. blooms	0	4	0	6		Pinks (various), doz. bchs.	0	0	0 0
Eucharis, dozen	3	0	6	0		Primula (double) 12 sprays	0	6	1 0
Gardenias, 12 blooms ..	4	0	6	0		Roses (indoor), dozen ..	0	6	1 6
Gypsophila, per bunch ..	0	0	0	0		" Red, 12 blooms ..	1	0	2 0
Lapageria, 12 blooms ..	2	0	4	0		" Tea, white, dozen ..	0	6	2 0
Lavender, dozen bunches	0	0	0	0		" Yellow	3	0	5 0
Lilac (French) per bunch	5	0	7	6		Stocks, dozen bunches ..	0	0	0 0
Lilium, various, 12 blms.	0	0	0	0		Sweet Peas, 12 bunches	0	0	0 0
" longiflorum, 12 blms.	4	0	6	0		Tuberose, 12 blooms ..	0	4	0 9
Maidenhair Fern, dozen						Violets (Pamre)	2	6	3 6
bunches	4	0	9	0		" (dark)	1	0	2 0
Marguerites, 12 bunches	2	0	6	0		" (English), doz. bch.	1	0	2 0
Mignonette, 12 bunches ..	2	0	4	0		Wallflower, doz. bunches	3	0	6 0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Aralia Sieboldi, dozen ..	6	0	to	12	0	Geraniums Scarlet, p. doz.	2	0	to 6 0
Arbor Vitæ (golden) doz.	6	0	8	0		Heliotrope, per doz. ..	4	0	6 0
Asters, dozen pots	0	0	0	0		Hydrangea, doz. pots ..	9	0	13 0
Calceolaria, per doz. ..	0	0	0	0		Lilium lancifolium, doz.	0	0	0 0
Chrysanthemum, per doz.	6	0	24	0		" longiflorum, doz.	0	0	0 0
Climbing Plants, various,						Lily of the Valley, 12 pots	0	0	0 0
dozen pots	4	0	9	0		Lobelia, per doz.	0	0	0 0
Dracæna terminalis, doz.	24	0	42	0		Marguerite Daisy, dozen	6	0	12 0
" viridis, dozen ..	12	0	24	0		Mignonette, per dozen ..	4	0	6 0
Epiphyllum, per dozen ..	12	0	30	0		Musk, per dozen	0	0	0 0
Erica, Cavendishi, per pt.	0	0	0	0		Myrtles, dozen	6	0	12 0
" various, dozen ..	12	0	18	0		Nasturtiums, dozen pots	0	0	0 0
Euonymus, var., dozen ..	6	0	18	0		Palms, in var., each ..	2	6	21 0
Evergreens, in var., dozen	6	0	24	0		Pelargoniums, per doz. ..	0	0	0 0
Ferns, in variety, dozen ..	4	0	18	0		Rhodanthe, per dozen ..	0	0	0 0
Ficus elastica, each ..	1	6	7	0		Stocks, per doz.	0	0	0 0
Foliage plants, var., each	2	0	10	0		Tropeolums, various, per			
Fuchsia, per doz.	0	0	0	0		dozen	0	0	0 0



SWINE.

THAT everybody cannot manage swine, otherwise pigs, to their satisfaction we have recently had evidence in inquiries upon matters of detail, which to an old practitioner are so simple that reference to them in the Journal would appear to be altogether superfluous. It certainly is difficult to remember always that beginners require prompting in the most trivial matters, even of pig management, and that minute explanation always, though tedious to the some, is highly valued by many. Some point over which they have been puzzled is made clear, the reason why it is important is explained, and that diffusion of useful knowledge which is the special aim of the Journal is accomplished.

Turning first of all to pig feeding, it may be said generally that they will consume all kinds of corn, pulse, roots, and green crops; but there must be some discretion in the selection and use of food so that waste may be avoided. No pig that is worth having should be suffered to sink into a condition of semi-starvation. From the first young pigs should be assisted, for they will drink milk when only a few days old, and it may gradually be thickened with meal till at weaning they will eat very much the same food as the older animals. Fine middlings is what we prefer using for young pigs, and after weaning, some coarse bran mixed with it occasionally does good. If the pigs are to be kept for jointers or bacon hogs, coarse middlings mixed thinly with water, or preferably with buttermilk, is the principal food, and in addition there may be given some maize, peas, or beans slightly broken by a kibbling mill as they gain size.

Prices fluctuate, but there can be no question that porkers of from 50 to 70 lbs. answer best for the markets of London and other large towns. Under a regimen of milk and meal they quickly reach that weight, but much depends upon the manner in which they are prepared and packed for market. They may of course be disposed of to a dealer alive, but if they are intended for Smithfield they must be well dressed, carefully packed, and dispatched so as to reach market in time for the early sales. If they arrive late in the day they often remain unsold till the following morning, and if not unpacked till then there is apt to be a want of freshness about them, which is at once detected by the keen eyes of a clever buyer, with the inevitable result of a low price.

It is sometimes advised that young pigs should have plenty of food to run to at will always. No doubt they require food frequently, but they should often be made to clear all up, and the feeding vessels should be kept free from any accumulation of filth. A watchful eye must be kept upon everything connected with the pig and its food; only keep it warm, clean, and comfortable, with as much food as it can consume, and it is quite certain to fatten quickly. But too often filth is allowed to accumulate to such an extent that the pigs become diseased, and there is a serious loss. All this may be avoided by the exercise of ordinary care. At this season of the year they suffer much from cold, and absolutely revel in plenty of dry litter, under which they can burrow and sleep in comfort. By all means let them have it; only take care that it is clean as well as dry, and then nothing but good can follow.

Meal and milk is the very best diet for porkers, and the pork is certain to be both wholesome and delicate, without any tinge of coarseness. Butter factory companies should bear this in mind, and endeavour to make the breeding and feeding of porkers for market a much more prominent feature than they have done

hitherto. The one difficulty of such factories is the disposal of separated milk; that difficulty is at once overcome if only they breed plenty of porkers and dispose of them to the best advantage. To do this our advice to send a really first-class article to market must be acted upon. Commission salesmen are much abused, and not altogether undeservedly, but there can be no question that much inferior produce is sent to them for sale which they have to get rid of in some way or other.

A little watchfulness is the best guide as to the quantity of food used. In this matter breed tells wonderfully, a really well-bred pig requiring much less food than an inferior animal. We have now some well-bred black Suffolk sows with young litters of pigs, which while pregnant were repeatedly said to be too fat. In point of fact they were not fat at all, but their compact square frames always gave them a lusty appearance; while some Essex sows having the same amount of food were thin enough in all conscience, with their long tapering snouts and long thin bodies. Curious indeed is it with what dogged persistence breeders will continue breeding such unprofitable animals. Certainly they have no excuse for doing so when there are so many ways open to them to obtain really well-bred pigs. Most remarkable upon the progeny is the effect of only one parent being well bred, and to breeders in a small way who cannot afford to keep a boar we say, Take all care to obtain good sows and you are quite certain to breed useful pigs, but if possible always have select parents of both sexes.

WORK ON THE HOME FARM.

With such frequent changes of weather, of rains, storms, frosts, and dense fogs, we cannot be too careful to afford shelter to all animals. Even sheep are the better for it, and, as we have urged so frequently, a dry hard floor and a fairly snug open shed are most desirable for sheep during winter. Ewes that were run with the tups towards the end of August must now have especial care. They must have very few Turnips, and be kept altogether out of muddy folds. With an abundance of feed upon pastures they will require nothing else while the weather continues open, but due provision should be made against hard frost and snow. A stack of Pea or Oat straw—the former preferably—plenty of sweet wholesome chaff, crushed Oats, and some bran should all be stored in readiness, so that there may be no want of food at any time. We decidedly object to having pregnant ewes burrowing for food upon a snow-covered pasture. The food so obtained does them very little good, and they are liable to become much exhausted when driven to do this by hunger. Let not the evil effects of a Turnip dietary upon ewes at this season of the year be forgotten. They may not suffer if the weather continues mild; on the other hand they may, and there may be a serious loss of many valuable animals.

Some hoggets folded upon white and yellow hybrid Turnips are so forward in condition that we shall soon begin drafting the best for sale. Younger and more backward hoggets are also in similar folds at night, with a run upon grass by day. The high price of sheep has the usual effect of leading folks to pay extravagant prices for inferior animals. We saw some hoggets sold recently at 45s. that were terribly low in condition, and several of them were suffering from foot rot. Certainly the buyer was a rash speculator, whose bargain was a very questionable one.

All roots intended for storing in heaps should at once be carted off the land. Nothing is gained by leaving them out so late in November, yet we have seen much of this work only just begun since writing our last note. The late Wheat sowing is being done in better style than usual, the mellow soil not being too wet admits of a thorough finish being given to the work. Never was autumn weather more favourable to good practice on all arable land; it is true the long spell of dry weather made some heavy land so hard that winter corn sowing has been delayed, but that little trouble is now ended.

THE ENGLISH SEED HARVEST.

RED CLOVER (*Trifolium pratense*, *perenne*).—This proves to be a very irregular crop, the Continental harvests are reported to be unsatisfactory generally, excepting in more southern districts, and a considerable proportion of the new seed is weather-stained. On the other hand, the American crop has been to a large extent reduced in quantity by extreme drought, and the grain from this district is again small, more or less sickly, and wanting in colour. There is also reason to believe a smaller area has been grown in Europe during the past year in consequence of the low prices that then prevailed. The small quantity of English seed produced is expected to compare favourably with the imported samples, the fine weather throughout September in England having been favourable to its development.

White Clover (*Trifolium repens*).—We cannot in any way modify the

unsatisfactory reports that we have already published of this crop. In some districts the crop is a failure, both as to quality and quantity. In all parts of Europe the samples are greatly damaged in colour by rain, and the average germination will be found to be lower than that for several years past. American seed is small and deficient in colour.

Alsike (*Trifolium hybridum*).—Earlier European reports of this crop were generally satisfactory, but the late rains on the Continent appear to have greatly damaged what previously promised to be a good harvest. At this moment exceptionally high prices are asked, both in Canada, United States, and Europe, whilst it is impossible to match the bright samples we have been accustomed to see during the past few seasons.

Trefoil (*Medicago lupulina*).—Is very short in quantity and inferior in average quality, as a consequence prices have, during the past two or three months, jumped from 21s. to 36s.

Lucerne (*Medicago sativa*).—This is only a moderate crop, and values may be expected to have an upward tendency.

Timothy (*Phleum pratense*).—The quality of the new deliveries of this seed is satisfactory, but the American reports point to a shorter crop than last year. This is accounted for by the decrease in the acreage under cultivation. At the present moment prices of Timothy are favourable to buyers; it is not expected it will touch a lower figure.

Rape.—Reliable samples of Rape have been scarce for some time; the crop generally is certainly limited in extent, and for the present somewhat high average prices may be expected to continue.

White Mustard.—Is a fair average crop, the quantity under cultivation appears to have been smaller than usual, and good samples are offered at the time this report is written.

Swedes and White Turnips.—These crops were harvested in excellent condition, but no important variations in values may be expected for some time to come. Purple-top Scotch Yellows are very scarce, and the acreage under cultivation being again limited, high prices are expected to rule.

Rye Grasses (*Lolium perenne* and *italicum*).—The crops of these are reported to be generally inferior, whilst in consequence of the abnormal prices that have ruled for the last two or three seasons, a much smaller acreage than usual has been under cultivation. At the present time values of fine samples of Perennial Rye Grass have advanced 50 per cent. on last year's price, but it is not expected that this extreme advance will be fully maintained.

Natural Grasses.—*Agrostis stolonifera* (Fiorin).—The home crop will be comparatively good, and an average quantity harvested. American reports speak of a very limited crop only.

Alopecurus pratensis (Meadow Foxtail).—Average harvest and quality is satisfactory, through rather light. Prices favourable to buyers.

Cynosurus cristatus (Crested Dogtail).—Fair average crop, but the colour of the seed is poorer than anticipated.

Festuca Duriuscula (Hard Fescue).—Crop harvested splendidly, but seed on the average rather discoloured, bright samples will command higher prices.

Festuca pratensis (Meadow Fescue).—The crop is reported much shorter than last year, and higher prices are being asked.

Poa pratensis (Smooth Stalked Meadow Grass).—Crop very short indeed, even smaller than last season's. American reports state that the crop is almost a failure, and therefore high prices are expected to rule.

Poa nemoralis (Wood Meadow Grass).—Crop rather short, dark coloured, and prices rule high.

Poa trivialis (Rough Stalked Meadow Grass).—Crop favourable; prices will not rule above those of former seasons.—JAMES CARTER & CO., High Holborn, London, and Mark Lane.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

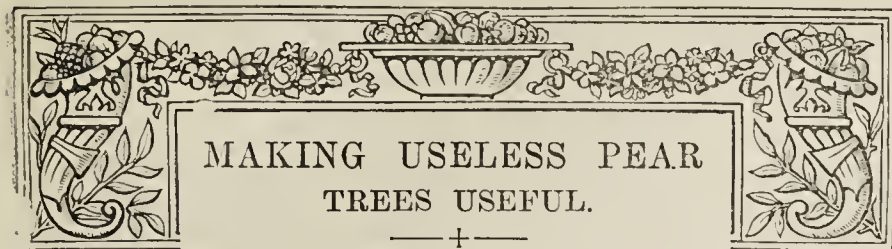
Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain
1890. November.		Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature.		
			Dry.	Wet.			Max.	Min.	In sun.	On grass	
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.	
Sunday	9	29.435	40.0	38.6	W.S.W.	45.1	49.1	38.4	74.1	35.2	
Monday	10	29.680	37.3	36.2	E.	43.9	44.6	32.6	47.7	0.010	
Tuesday	11	29.440	43.2	41.9	S.E.	42.9	50.8	33.0	75.9	30.9	
Wednesday ...	12	29.864	38.8	37.9	S.W.	42.9	51.2	33.4	68.1	0.216	
Thursday	13	29.884	48.3	47.9	W.	43.1	51.1	37.9	58.2	—	
Friday	14	30.054	39.9	39.9	S.E.	43.9	56.9	33.9	65.5	0.089	
Saturday	15	30.161	47.7	46.8	N.E.	45.0	51.9	39.4	76.1	—	
		29.788	42.2	41.3		43.8	50.8	35.9	66.5	30.4	0.315

REMARKS.

- 9th.—Rain in small hours; bright day; a little mist in the evening.
 10th.—More or less fog till 2 P.M., lights necessary at times; a little mist in afternoon.
 11th.—Dull and drizzly till 10 A.M., gradually improving, and bright sunshine from noon to 3 P.M.; fair evening and night.
 12th.—Sun shining through slight fog in morning; brilliant afternoon; rain in evening and night.
 13th.—Overcast and mild; practically free from fog.
 14th.—Fog till noon; bright sun from 0.15 to about 2.30 P.M., then cloudy.
 15th.—Wet from 2 A.M. to 7 A.M.; bright and fine from 10 A.M.

A very ordinary November week, temperature slightly below average.—G. J. SYMONS.



I HAVE a number of Pear trees on walls, some of which have been planted for twenty years or more, others about half that time, but all are practically useless. They bear small fruit sometimes, rarely large clean specimens which I hope for. Occasionally they are crowded with blossom, and they grow a forest of breastwood. Cut as I may it is all the same—one crop of shoots removed making way for another. I am told the trees are worn out, but cannot quite understand how ten and twenty-year-old trees can be worn out at the same time. I ask for information, and if I may be excused for saying so, would like it from someone who has really done himself what he would teach others to do in making useless Pear trees useful, if this problem has ever been solved." Thus writes a correspondent who is disappointed with his trees. Some of his observations are rather trite, and the subject on which he writes is of considerable importance, as there are Pear trees very similar to his own in many gardens.

We have the satisfaction of knowing that the problem suggested has been solved in several gardens. One of the most successful examples of improving Pear trees on walls that has come under our notice was at Impney by Mr. R. Parker, and the method he adopted has been described in the *Journal of Horticulture*. A Kentish fruit grower, Mr. R. Smith of Yalding, has also made useless Pear trees useful, and in a paper which he read at one of the meetings of the British Fruit Growers' Association he has told how he changed the character of his trees and fruit in the following words:—

There is an increasing interest in the culture of these most noble fruits, and much more fruit could be grown on large Pear trees on walls if the knowledge of how to induce more fruitfulness were possessed by the cultivator. Many large and well-trained Pear trees are to be seen throughout England. But it is not often one sees a crop of Pears on these good looking trained trees. Why is it? This is the question I have set myself to answer. Now let us examine carefully how these trees are pruned. In nearly every case the spring shoots are pinched in May or cut off in June, consequently more shoots appear; these, in like manner, are cut away to make the trees look neat. This is all very well as regards appearance, but it only pleases the eye for awhile. The owner soon becomes tired of seeing no fruit from year to year, and begins to inquire why they fail. The answer is not very difficult to find. Where large Pear trees produce a large quantity of breastwood they require root-pruning.

Root-pruning is well understood by some cultivators, others can learn from the frequent instructions in the gardening papers. One word, Root pruning must be done thoroughly. Assuming, then, that root-pruning is adopted as a means to induce fruitfulness for Pear trees on walls, in taking out the soil have it wheeled away during the operation, it will give more room for the work. I strongly recommend fresh soil to be used for filling up after the trees are root-pruned, as this is very essential. A good maiden loam is the best. Root-pruning induces fibrous roots, and fibrous roots well fed give good fruit. Coarse roots give a quantity of breastwood. After the Pear trees have been root-pruned and fresh soil given, farmyard manure should be placed over the fresh soil and then watered, giving a sufficient quantity over the mulch to reach every root of the tree operated upon. I have found the

end of October or the beginning of November a good time for root-pruning. Probably the trees will require looking after the following year in watering, particularly if a dry spring follows.

Pear trees very often have a crowd of blossom buds the second year after root-pruning, these should be reduced very much in number, leaving on a few evenly over the trees. This work is best done early in March, and if a large crop of fruit sets, thin the Pears, leaving only one or two to a bunch, one only if large Pears are required.

We have large trained Pear trees on walls that were root-pruned eight years ago, and fresh soil given, that have borne good crops of fine clean fruit. But before root-pruning they produced no fruit fit for table or market. Young Pear trees, say up to ten years old, I would lift, shortening all large coarse roots, and replant in fresh soil on the same site, or any other part of the garden, according to requirements or conveniences. The west wall is the best situation for the general collection of Pears. A few varieties succeed on the south wall, and a few on the east. I find the north wall aspect is too cold for Pears.

Much difference of opinion exists in regard to pruning wall Pear trees, and much depends upon the vigour of the trees, when to prune and how to prune. If the trees are old and have a good spread of branches, and a quantity of old spurs on those branches, I recommend the summer growth to be left until August, and instead of cutting the shoots off, as is the ordinary practice, I pull them out, or wrench them away from the old spurs, which admits light and air to the remaining buds or spurs. I am speaking of where there is an abundance of spurs upon the branches, as is often the case with old trees. If Pear trees are pruned before or at midsummer, much more growth will occur before autumn if the season is a favourable one, and this second growth is waste which should be avoided. I have found wrenching away the summer shoots instead of cutting answer all my expectations, and can confidently recommend it.

I find it good practice to shorten a few spurs every year. About the middle of September is a good time to do this work, because the wounds made by cutting off these spurs soon heal at the end of summer. Some of our old trees that were spur-pruned rather severely a few years ago have formed fresh spurs close to the branch and wall; upon these we have our best fruits. I endeavour to keep the spurs as close to the brick wall as possible, and do not allow one spur to shade another. Let every branch of the trained tree upon the walls have sufficient light and air, and also every spur upon the branch, remembering always that the more sun, light, and air the cultivator can admit between the branches and the spurs, the more heat he has from the wall. Cultivators very often overlook this all-important matter in wall trained Pear trees. Better have half the number of branches than the branches to be crowded; again, better have half a crop of good fruit than a full crop of inferior fruit. Our Pear trees thus pruned a few years ago looked younger instead of older, and are much neater than before. I do not recommend a great quantity of spurs to be cut off every branch at one time, better do the work a little every year until the whole is complete; by so doing there is no risk of losing a crop of fruit.

I have been dwelling upon the old trained Pear trees upon walls, knowing that there are many well trained trees that would be objects of beauty if they bore crops of good fruit. My aim is to point out how this can be brought about. First, root-prune to check excessive growth, giving fresh soil to the roots, then mulch with decayed farmyard manure; give water freely in dry hot weather; thin the spurs, and keep them as close as possible to the wall; thin the blossom buds if too numerous, also the fruit when set in bunches. Never aim at a large crop in any one year, but rather a moderate crop yearly.

The trees should be relieved at flowering time by rubbing off half or more of the blossom buds. I feel sure if this were adopted

more generally it would help very much to prevent exhaustion of the Pear trees in the spring months. If this disbudding were carried out systematically great benefit would accrue to the trees, and probably they would flower more regularly every year. It is a well known fact that when Pear trees have large numbers of flower buds one year they have few, if any, the next.

I do not propose to say much about stocks further than I find some varieties do not like the Quince stock with us, others thrive upon it. My opinion is the Pear stock suits the majority of soils better than the Quince stock. However, cultivators would do well to consult the fruit tree growers in their own districts, and further find out from a few gardens where Pears are well grown what stocks suit the district—that is, the soil and situation. Soil has a great deal to do with Pear growing in any district.

The wall Pear trees have the same protection during winter and spring as the Peaches and Nectarines—namely, 11-inch wide boards at the top, fastened to iron brackets or bolts. These boards are put up in November, and taken down about the end of May. They are all the protection the Peach, Nectarine, and Pear receive during the spring months, and we grow these fruits very successfully, and have done so every year for twelve years past. My twelve years' successive crops of Pears should tempt others to become cultivators, and those who have only been partially successful should persevere until they attain still better results, procuring with wall Pear trees crops of fruit every year. This is better than blaming the weather for failures, which is too often done undeservedly.

In the above practical notes by a cultivator who has "done what he teaches" we hope our correspondent will find the information he seeks.

SYRINGING AND WATERING PLANTS.

As a supplement to the remarks of "M. D." on syringing, page 397, perhaps it would not be out of place to say a few words on watering plants in pots, especially at this time of year, when water should be supplied cautiously.

In the first place let it be said that there is a right and a wrong way of watering plants, and depend upon it if a person is not of a thoughtful and observant nature the wrong way will present itself, and perhaps be adopted first. Not a few gardeners suppose that it is positively essential to water a plant as soon as it is fresh potted, and if their method is opposed they will bring various worthless arguments to support it, the most common one being "that a good watering settles the soil." There is no doubt that it does "settle the soil," and it is my opinion that in a good many cases it also goes a long way to "settle" the plant.

To prove the error of this practice let us take for example a plant that is recently potted, say from a 5-inch into an 8-inch pot. The root action of that plant is suspended for a time, and if the potting soil is in proper condition—that is, neither too wet nor too dry—no water will be required until the young roots have fairly commenced to move. But suppose that plant is watered, the old roots and the new soil are saturated, and the young rootlets on pushing out feel this cold wet soil, and as a natural consequence turn black and wither, and the plant struggles out a weary existence until the soil becomes in a suitable condition for the roots to penetrate. Hardwooded plants, particularly Roses in pots, are most susceptible to this treatment on account of their root action being slow. Pelargoniums, if watered as soon as potted, never come away so freely as they would were they left eight or ten days, or even longer in dull weather.

Another erroneous way of watering plants in pots is giving them a little drop every day. The watering is done one day, and if a plant is not dry enough to water thoroughly, it is given a little drop "just to prevent it becoming dry." The next day the plant is in a similar condition and a little drop more is given, and so on from day to day. Some plants will stand this kind of treatment longer than others, but all must sooner or later become a prey to sour soil, for the roots are never properly dry nor thoroughly wet.

An evil arising from this continual dribbling is that the plant in time becomes waterlogged. How is this? Because enough is not given to pass straight through the pot and keep the crocks clear. So it follows that the right way to water a plant is to first let the soil get dry enough, not too dry mind, and then to fill the pot from the surface of the soil to the level of the rim. This will be

enough to pass through, wetting the whole thoroughly, and clearing the drainage as it passes out.

One more point, and that is in watering plants in houses take care to have the water as near the temperature of the house as possible; evil results cannot help but follow the application of very cold or very warm water.—F. A., Kelton, Aigburth.

DAVALLIA PARVULA.

THIS charming little Fern is a native of Borneo, and is deserving of a place in every fernery, although at present it is not so frequently met with as might be expected. The rhizome is slender and creeping, as in the other species, but the fronds are very diminutive, finely divided, and dark green, while the height of the entire plant rarely exceeds 3 or 4 inches. It may be grown in a Wardian case or under a large bellglass, and requires a small portion of the stem of a Tree Fern to cling to. Over this the rhizomes will run freely, producing delicate and pretty little fronds. Any approach to stagnation in the soil or on the fronds must be carefully avoided or they will speedily damp off, but at the same time a deficiency of moisture is equally fatal. For this reason a Wardian case is especially adapted to its requirements, as the suitable degree of moisture can easily be maintained. The pan must be well drained with clean potsherds, the largest at the bottom, and a layer of smaller pieces over them. The soil should consist of fine fibrous peat, with a good proportion of silver sand. If the Fern stem intended to support the plant is placed in an erect position the water may be applied at the top, and allowed to trickle down the sides. Sprinkling water over the fronds too freely is not advisable. A temperature of 60° to 76° is necessary to obtain it in good condition.—F.

STRAWBERRIES IN POTS.

THE weather during July and August encouraged rapid growth in plants that had been layered early in their fruiting pots from vigorous young plantations. The weather during September could not have been better for the development and maturation of the crowns. Throughout the plants should be in the best possible condition, and judging from our own stock good results may be anticipated during the forcing season. Cultivators will act wisely in leaving their plants outside for some time to come. Nothing is gained by rushing them under glass to protect them from early frosts and heavy rains. The plants do not start into growth earlier by this treatment, but the reverse. They are often stubborn and refuse to start freely when required to do so. This is reasonable, and only what may be expected. The protection of frames keeps the plants slowly moving and prevents their going to rest as early as they would if given natural treatment outside. If success in early forcing is anticipated it is important that the growth of the plants be brought to a complete standstill before starting them again into growth. Cessation of growth, if only for a brief period, is essential if the plants are to start when introduced into the forcing house strongly and quickly. It was a common practice at one time when closing early vineries and Peach houses in November to fill the shelves with Strawberries, and this often took place before the plants had completed their growth, and failure or partial failure was the result, plants started a month or six weeks later generally surpassing them and giving more than double the weight of fruit. Drying the plants and thus forcing rest upon them is ruinous in its results. No artificial system of inducing the plants to rest can be compared with the low temperatures and frost to which the plants are exposed when left outside. Once the plants have been thoroughly frozen and are allowed to rest for a short time afterwards they may be introduced to the forcing house with certainty of success. If the pots have been well drained and are standing upon ashes heavy rains will do them no harm.

When hard frosts commence, and heavy falls of snow may be anticipated, the plants may be placed in cold frames closely together if they can be spared for them. But in few gardening establishments can frames be devoted to them where large quantities are grown. They are not necessary, the plants are perfectly safe outside if the pots are plunged to the rim amongst ashes or leaves to protect them from frost. Long spells of severe frost are liable, however, to damage the rims of the pots even when plunged. Perhaps the best of all methods of protecting them is to plunge the pots in beds of ashes facing the south, and place boards round them, secured into position by driving a few stakes into the ground, to which the boards are nailed. Corrugated zinc sheets or rough shutters made to throw off rain and snow is all the protection they need. Further protection can be afforded the pots when the weather is very severe by scattering over them a little dry bracken or dry straw. For the next month or six weeks the plants will be

better unplunged, but all can be provided ready, and the plants placed close to where they will be wintered. When plunging takes place the plants must be placed close together, and in their present stage they are better standing sufficiently far apart, so that air can have free access to them.

Much feeding during the spring will be saved by top-dressing the plants before they are introduced into the forcing house, or in the case of late batches before they begin to grow. For this purpose fibry loam should be broken up moderately fine, and mixed with equal quantities of cow manure. Failing to obtain the latter, fresh horse droppings rubbed through a half-inch sieve will answer the same purpose. One 10-inch potful of soot may be added to each barrowful of the compost. Wood ashes may be used in place of the soot where the latter cannot be obtained good, or equal quantities of both may with advantage be used. If the loam is deficient in lime a 5-inch potful to each barrowful may be incorporated as the work of top-dressing proceeds.—WM. BARDNEY.



"AMATEUR" ROSE GROWERS.

IN brief answer to "J. B.," I would say first of all that I am sure I for one would not laugh at his planting a choice Rose by candlelight, but should heartily admire his enthusiasm. At the same time I would suggest that it would have been better to have "laid it in" by candlelight, and to have waited, even three months if necessary, for a spare quarter of an hour of daylight, in which to plant it at less disadvantage.

Again, I think he is mistaken in thinking that "a man of means can leave his Tea Roses unprotected from frost till the last moment as it were." I should expect to find such a one caught unawares, and for myself, if I had help, I should cover them up earlier than I do. With regard to his main contention, I still think there is no grievance. As was well stated a year or two ago in the Journal by a leading amateur in response to a similar complaint, it is "pluck, not protection," that is wanted. "An Exhibitor" and "J. B." should bring their views before the annual meeting of the N.R.S., and I think they will find no disposition to stifle discussion or to neglect the prospects of small growers; but they should be prepared to propose something definite themselves.

The suggestion of "An Exhibitor," if I rightly understood him, was that there should be a general numbering of plants among amateurs, and that we should show in classes according to our returns. When I stated in answer to this that victory did not by any means necessarily rest with big battalions, and added a private opinion that a man with 1000 Roses might at his best show as good a twenty-four as the man with 2000, I was told "any schoolboy" could refute such reasoning. It was not meant as reasoning, and still less as arithmetic; but if he could see the statistics of the National Shows he would find that it has not seldom been proved. I did not answer at once, as I gave "An Exhibitor" considerable credit for standing to his guns in response to an unexpectedly heavy volley, and he admitted he had been mistaken as to the 3-acre business.

But even "J. B." does not uphold "An Exhibitor" in his proposal. It is not the number of plants grown, but the number of men employed that he objects to; but, although no doubt "D., Deal," was right in the exceptional case that he recorded because it was exceptional, I have no hesitation in saying that among leading amateurs "six men" are even more visionary than "3 acres." Apparently his suggestion is for classes for amateurs "employing no regular gardener;" and although he is quite wrong in placing me "in the very front rank of exhibitors," this protection would not shut me out, and neither would it exclude, unless I am much mistaken, two or three at least to whom this position could not be denied. No, I am wrong; he does not like the usual formula "not employing a regular gardener," but apparently wants protection for those who cannot afford even occasional help. I do not quite see how this is to be managed; he should formulate his requirements. A class "for those who allow no one else to touch their Roses or Rose beds" might not be satisfactory, and "for those who do not pay income tax" might be invidious.

It is true that a business man who cannot give daylight to his Roses when necessary is very seriously handicapped in show competitions; but I fear a class "for those who can only attend to their Roses by candlelight" would not answer.

Seriously, I would heartily support any proposition that would encourage such true amateurs and take away any real grievance, but I think that limitations as to space, plants, and men would not be successful.—W. R. RAILLEM.

LOCAL ROSE EXHIBITIONS AND THE AMATEUR CLASS.

I MUST confess I feel highly gratified to think that there are others besides myself who feel the smart of so great a monopoly at our Rose shows. Remembering it is by discussion that knowledge is gained and grievances redressed. It cannot be denied that the schedules of the National and many of the provincial and affiliated societies as at present

constituted are a monopoly, inasmuch as there is every facility and encouragement provided for the larger growers, but none for the smaller.

I venture to quote a passage from the "Rosarian's Year Book," 1890, at page 16, commencing at line 16, by the Rev. H. T. Frere, who says we want more Rose growers and exhibitors, as they are the feeders of the National, and the young ones are either timid or wanting in energy, and adds: "We ring changes of the prize list on too small a peal year after year. A, B, C, D, &c., never an E or F." I must say I thoroughly endorse his sentiments, but what chance is there for any small grower to exhibit at any of the large shows as matters stand now? Is there any wonder at timidity, or even lack of energy, seeing that the schedules are framed in such a manner as to obstruct the smaller growers? What inducement or encouragement is there? None.

I think it is quite time that the peal of changes were extended. Why should not the Committee of the National uphold its dignity worthy of the title it now holds, by making it thoroughly national, setting a good example, and preventing any infringement in the classes? But so long as the smaller growers are open to such ungenerous treatment, how can they expect the young exhibitor to join their ranks with any degree of success? Let the Committee make fair distinctions between the classes of growers, giving each according to his class a chance of honourable merit, perchance realising his ambition to win a prize. I think it would be the means of putting an end to a grievance of long standing, and induce more persons to join the Society. The influx would be greater at the turnstiles, more friends of the exhibitors, besides an increased following of the general public? Taking all this into consideration the affair would undoubtedly be more remunerative, decidedly more national, and give greater satisfaction and more encouragement to the young and rising exhibitor, stimulating him to greater exertions, knowing that he is honourably handicapped, and justice and fair play meted out to him.—AN EXHIBITOR.

IN MEMORIAM.

THE LATE MR. SHIRLEY HIBBERD.

WE shall all be the poorer for the loss of this genial friend and gifted comrade in the gentle art. Leaving to others to estimate or measure up if they can his distinguished services to horticulture, I would pay grateful tribute to his social and philanthropic labours on behalf of gardeners. To see, hear, and converse with Shirley Hibberd was like a draught of cold water to many hungry, thirsty, provincial gardeners. He had also in a special degree the rare merit of clothing the dry bones of horticultural theory and practice with an alluring light and a cultured sweetness that won and kept for him a wide circle of readers and hearers to the last. Peace be to his memory, and may his words and deeds live after him in a race of young botanists, gardeners, and writers, whose works shall show that they have sat at the feet and learned of Shirley Hibberd.—D. T. FISH.

OUR late good friend and fellow worker in a common cause has left a blank that can never be filled in his own unique way. Only one Shirley Hibberd can be produced in a generation. He was a man of generous impulse and vivid imagination. I sat by his side at the Strawberry Conference, where we both read papers in the miserable St. Stephen's Hall of the Royal Aquarium last July. When Mr. Hibberd stood up to read his paper I felt the draught from the open window at the back, and observed its effect on his hair. Very quietly, but immediately, I had the window closed. After reading for about half an hour he sat down, placed his hand behind his head, and in tones of the deepest concern whispered to me, "The draught has been terrible. All the time it has been cutting my head off, and my neck is like ice. I must take a severe cold." I assured him the draught did not reach him for more than one minute, as the moment he stood up I had the window closed. "Very well, then," was his emphatic response; "if that is so I shall not take cold. It is all imagination. A wonderful thing is imagination; I don't know how I should live without it. I thought my neck was as cold as ice, when all the time it was as warm as toast. Thank God I shall not take cold, so that matter's settled." Nor did he. I should like to say more about him, but the shows of the "golden flower" he loved, and which was the theme of his last public discourse, block the way.—J. WRIGHT.

THE remains of Mr. Shirley Hibberd were interred in the Abney Park Cemetery on Saturday last, in the presence of about 200 of his friends and admirers. He had no relatives, except his bright little motherless daughter "Nellie," about five years old, who has for some time been under the loving care of Mrs. A. F. Barron, and we are glad to hear her future is provided for. Mr. Hibberd's coffin was covered in wreaths and floral offerings from Mr. and Mrs. Barron, Mr. E. Charlton, Messrs. Cannell & Sons, Mrs. Fitch, Mr. and Mrs. Knighton, Mrs. Charles Turner and family, Mrs. Dixon, Mr. G. Bunyard, B. S. Williams & Son, Mr. and Mrs. G. Gordon, Messrs. W. H. and L. Collingridge, Mr. G. Stanton (Ivy), Mr. James Crute, Mr. and Mrs. Jackson, Dr. Hogg, Messrs. Sutton & Sons, the United Horticultural Provident and Benefit Society (an anchor), Miss Roberts, Mr. and Mrs. Mitchell, and there was a basket of flowers from his child.

Among those present in the cemetery we noticed Rev. W. Wilks, the representative of the Royal Horticultural Society; Dr. Maxwell T. Masters, Mr. H. J. Veitch, Mr. and Mrs. Barron, Mr. G. Gordon (Mr. Hibberd's able assistant for more than twenty years), also Messrs. J.

Crute, H. Cannell, E. Hill, Tring; C. Warden, Clarendon Park; R. Ballantine, W. H. Collingridge, C. T. Druery, H. Balderson, W. Jordan, Regent's Park; E. Sanderson, T. S. Ware, Henry Williams, P. McKinlay, J. Weeks, A. Turner, G. W. Cummins, J. Cochrane, Finsbury Park; F. Fitch and W. Watson, Kew; F. Q. Lanc, J. H. Laing; Col. Mackenzie, Epping Forest; J. R. Chard, J. Willard, and the representatives of Messrs. Sutton & Sons, of Mr. W. H. Pollett, and of most of the gardening papers, besides many private friends of the deceased gentleman, who was a shining light in the horticultural world.

FROST IN OCTOBER.

IN Mr. G. J. Symons's "Meteorological Magazine" for November, the following particulars are given respecting the "Sharpest Frost in October for Half a Century."

Whole winters pass sometimes without a frost as sharp as that of October 28th, 1890; we therefore give a few particulars of it.

The following table gives in column 1 the date of every year since 1840 in which the temperature at Greenwich has in October fallen below 30°; column 2 gives the lowest air temperature in those Octobers; and column 3 the date on which it was recorded. The last two columns refer to Camden Square, London, and give the minima for the same months and years as were characterised by exceptional frosts at Greenwich.

It will be noticed that occasionally the dates are very different.

LOWEST TEMPERATURE IN OCTOBER.

YEAR.	GREENWICH.		CAMDEN SQUARE.	
	Temperature.	Date.	Temperature.	Date.
1842	28.3	20	No observations.	
1843	28.5	18		
1859	26.5	24	26.6	24
1862	28.5	30	31.8	30
1868	29.3	20	27.8	19
1869	27.9	28	26.6	28
1872	29.1	14	31.8	13
1873	26.7	29	26.2	30
1877	28.2	18	30.9	19
1880	29.2	30	29.6	30
1881	26.2	17	27.3	17
1887	25.3	13	25.4	26
1888	27.9	8	28.2	8
1890	24.7	28	23.8	28

It is remarkable that instead of the last twenty-five years including, as theoretically it should have done, half of the instances of low temperature, it contains ten out of fourteen: moreover, the lowest, and the lowest but one, have both occurred in the last four years. This last October gives the absolute lowest both for Greenwich and for Camden Square.

But it was still colder in the more central parts of England. We cannot vouch for all the following readings being from verified thermometers, with no spirit at the top of the tubes, and duly hung in Stevenson's screens, but their general consistency shows that there is not much the matter. We give the readings in the order of temperature, starting with the lowest, and in order to keep the table within reasonable length, stopping at 22°: but we may add that in the greater portion of Scotland and Ireland the weather was not at all severe.

LOWEST TEMPERATURE ON 27TH—28TH OCT., 1890.

County.	Station.	Observer.	Temp.	Date.
Leicester ...	Barkby Vic.	Rev. E. N. Pochin	16.0	27th
Derby	Willington	Rev. G. A. Smallwood ...	16.0	28th
Roxburgh...	Melrose, Abbey Gate	Mr. Dodds	17.8	28th
Ayrshire ...	Old Cumnock ...	Mr. J. Ballantine ..	18.0	27th
Herts.....	Broxbourne	G. J. Newbery, Esq.	19.0	27th
Bucks	Winslow, Adding-ton	Mr. Mathison	19.0	28th
Surrey	Reigate, Holmfels	Miss Baker	19.4	28th
Leicester ...	Loughboro', Victoria St.	W. Berridge, Esq.	20.0	28th
Lincoln.....	Boston	W. H. Wheeler, Esq., C.E.	21.0	28th
"	Horncastle(Hem- ingby)	Rev. E. S. Bengough.....	21.0	28th
Montgomery	Carno (Tybrith)	Miss Marsh	21.0	27th
Yorkshire ...	Wakefield	Dr. Clarke	21.2	28th
Hampshire	Stratfield Tur- giss	Rev. C. H. Griffith	21.7	28th



SEMI-EARLY OR OCTOBER FLOWERING CHRYSANTHEMUMS.

It appears that there are so many new good semi-early varieties of this season that I think it well to say a little of them. It seems indeed that what has been desirable for some time—viz., that an October exhibition should be held for them to show their merits not possible either in September or November, and when I entered the Aquarium at Westminster on the 15th of that month was pleasantly surprised to see that the thing was accomplished; for although it was a fruit and flower show the Chrysanthemums were such a large feature that they were sufficient to make a show of themselves. Many of those exhibited were hardly such as could be considered October flowerers, but then the blooms looked so fresh in their not fully developed beauties that there was a delicious charm about them not belonging to the blooms of similar sorts kept so long under glass as is necessary in November. It was a new sensation.

The main feature of this Show was two large groups in fine order containing many old favourites, as well as several new sorts. One group was from Messrs. J. Laing & Sons of Forest Hill, London, S.E., and the other was from Mr. H. J. Jones of the Ryecroft Nursery, Hither Green Lane, Lewisham, London, S.E., and we have to thank these exhibitors especially, as there were no prizes for these fine masses of flowers, except the credit and publicity.

As for the novelties of this Show perhaps the exhibit of Mr. R. Owen of Maidenhead of a large number of seedlings raised in his nursery was the greatest. The seed grown by him was not produced in the way I grew mine, that is naturally as far as regards fertilisation, but regularly crossed one upon another, as Dr. Walcott of New York raised Sam Henshaw from Viceroy of Egypt and Comte de Germiny. Mr. T. H. Spaulding, of Orange, New Jersey, U.S.A., does the same thing. He says that a much larger percentage of good sorts come that way, and this season's experience of Mr. R. Owen seems to justify this opinion; indeed it is quite in accordance with very much experience or perhaps the law, that all breeding in-and-in tends to retard the development of a species; while breeding outwards, although often producing a reversion backwards, is one of the great openings to advance by selection, seeming one of the main keys to unbounded progress. The seedlings exhibited contained many very good varieties, but the greatest novelty was a good Japanese, which he has named Coral Queen, and a good name too, for it is more the colour of pink coral than aught else. It seems to me a new colour. This is the result of a direct cross between the Japanese varieties William Holmes and Pynaert Van Geert. I think it will be a very acceptable colour if not among Chrysanthemum growers, that it will be in the cut flower trade, and the ladies who are so great a factor there.

The most striking exhibits at this Show were some very fine blooms of a newly discovered white of most superb merit. It is named Bouquet des Dames, exhibited by Mr. N. Davis. How such a beauty has not been shown before is a wonder. It is a large bloom of great body; the blooms shown were, of course, from disbudded plants, grown in the best style, but it is likely such a powerful plant is fit for many other uses. Mr. Davis also exhibited a plant of the new American incurved variety, Miss Anna Hartzhorn, for which he received a certificate. This is another beautiful white, which will at once make itself a place in many collections. It is not so tall a plant as Bouquet des Dames, but very white and exquisitely delicate, probably fit for many decorative purposes if it should not prove large enough to satisfy the craving for size.

Mr. A. J. Manda, of the United States Nursery, Hextable, Swanley, Kent, showed a small board of Chrysanthemum blooms, among which was one of Mrs. Hicks Arnold. This is a new American variety, the first time exhibited. It is a very stout bushy sort. The plant grows not more than about 2 feet high, bearing a pale magenta to white flower, 4 inches across, very flat, reflexed near the middle, and incurved at the end of the petals, blooming this month or at the end of September. It is a very good grower, and quite a novelty in shape for any season, especially in October. It can be grown without sticks, and must command attention at once. He also had on this same board some flowers of Clarence Bryant, a new good American yellow. I have grown this, and it seems a very good sort. It is not too tall; a Pompon in size.

Harvest Queen, not yet exhibited in England as far as I know, is another American variety, said to be a sport from October Beauty, but is larger and better in its flowers than that. It is an excellent plant, good grower and robust; height, 3 feet. Bushy habit and a profuse bloomer. Flowers reflexed, very white, 2 to 3 inches across. It will be very good for cut flowers. We have nothing in the style at the time.

Cameleon is another October flowerer, 2 feet 6 inches high, of stout close growth. Blooms reflexed 3 inches across; colour, primrose. Its bloom is so thick a mass on the top of the plant as to form a solid table of flowers. It is one of the most profuse flowerers I ever grew. Very striking indeed in appearance.

Souvenir de M. Menier is a new crimson. It will probably bloom in

September next year. Grows 4 to 5 feet high. Blooms 4 to 5 inches across; of globular form with straight florets.

Mons. H. de Fortanier is rather a slender plant, 4 to 5 feet high, the flowers being about 5 inches across, of a bright purple crimson colour. This, as it has bloomed this season, is a thin flower showing a white disc, but as it is likely to come better next season if it be not valuable for anything else, will probably furnish seed with the capacity of descendants of a colour much wanted among the early sorts.

Madame Dolobel.—This is another useful semi-early, quite a new style in the forward sorts; 3 feet high. Flowers 3 inches across, incurved, red crimson in colour.

M. Hilliot is very similar to the above in colour and form of flower. About 2 feet 6 inches high. The flowers are rather larger than Dolobel.

Madame Ernest Bergmann.—A profuse bloomer. It is a pink Japanese, somewhat like Pink Lacroix, and will most probably be one of the early sorts next season. Grows 4 to 5 feet high.

Madame Ferdinand Bergman is a dwarf white, with straight petals, wide and stout.

Mons. Ernest Bergman is a thin growing plant, with fimbriated crimson flowers.

The following are all semi-early, and some of them probably early next season:—Mons. Robert Owen, Mons. Harry Laing, Rose Laing, M. Jules Humbert, M. Ulrich Brunner, H. Faisant Lamotte, and Mons. E. Barrillion.—W. PIERCY.

CHRYSANTHEMUM SHOWS.

LIVERPOOL HORTICULTURAL ASSOCIATION.

ON Tuesday and Wednesday, November 18th and 19th, the eleventh Chrysanthemum, fruit, and plant Show was held in St. George's Hall. The cut blooms, fruit, and plants had been arranged very satisfactorily by members of the Committee, and the hall looked at its best, not only from the ground floor, but from the spacious galleries on each side. The weather on the first day was very bad, but it is very gratifying to be able to announce that the attendance was excellent on both days. The greatest interest centred in the class for cut blooms. There were over 1700 blooms staged, all of the highest quality, and those in the losing stands need not feel discouraged, for many worse stands have been seen at Liverpool. For twenty-four incurved and twenty-four Japanese there were eight lots staged. Mr. C. Osborne, gardener to H. J. Robinson, Esq., Aymestry Court, Woolton, Liverpool, was well accorded the premier position. His stand contained grand massive flowers in both sections, and all very fresh, and Mr. Osborne must be congratulated on his success. The incurved in the back row were Golden Empress (two), Emily Dale (two), Lord Alcester (two), Queen of England (two). Second row: Lord Wolseley, Miss Haggas (two), Jeanne d'Arc, Violet Tomlin (two), Empress of India, Princess of Wales. Front row: Hero of Stoke Newington, Barbara, Mrs. Heale, John Salter, Jardin des Plantes, Empress Eugénie, Cherub, Mrs. Norman Davis. Japanese, back row: Mrs. Falconer Jameson (two), Etoile de Lyon (two), Sunflower, Condor, Madame Laing, and Edwin Molyneux, very fine. Second row: Stanstead Surprise, C. H. Wheeler, W. W. Coles, Yellow Dragon, Hamlet, F. A. Davis, Stanstead White, and Mons. Bernard, both superb. Front row: Avalanche (two), Boule d'Or, Stanstead White, Mons. Bernard, Marsa, and Sarah Owen. The second position was worthily taken by Mr. G. Burden, gardener to G. Cockburn, Esq., Lingdale Lodge, Oxton, Cheshire, who had an excellent stand. Particularly striking in the Japanese were Etoile de Lyon, without doubt the best bloom of the variety in the Show, and Condor. Mr. A. R. Cox, gardener to H. W. Watts, Esq., Elm Hall, Wavertree, Liverpool, was a good third, and Mr. J. Edwards, gardener to Henry Tate, Esq., jun., Allerton, Liverpool, fourth.

For eighteen incurved Mr. J. Brantingham, gardener to W. Radeliffe, Esq., Roselands, Aigburth, was first, being closely followed by Mr. G. Eaton, gardener to W. H. Shirley, Esq., Allerton House, Allerton; third Mr. G. Burden. For the same number of Japanese Mr. G. Eaton was placed first with a very fine stand of fresh blooms; second Mr. A. R. Cox, who had also a very good stand; third Mr. J. Harrison, gardener to Mrs. W. G. Bateson, New Heys, Allerton. There were two classes for twelve incurved, and the competition was keen in these, as in all the smaller classes. In Class 12, for twelve incurved, Mr. C. Osborne was first; Mr. T. Leadbetter, gardener to T. B. Hall, Esq., Larch Wood, Rock Ferry, second; Mr. W. Broadey, gardener to W. H. Jones, Esq., The Grange, Hooton, third. Class 13, for the same number, first Mr. P. Green, gardener to T. Gee, Esq., Greenhill, Allerton; second Mr. C. Smith, gardener to D. Wilson, Esq., Devonshire Place, Claughton; third Mr. F. J. Hartless, gardener to R. T. Wilson, Esq., Newlands, Hitchin. In the corresponding number of Japanese, Class 16, Mr. J. Wilson, gardener to H. Cunningham, Esq., Gorsey Cop, Gateacre, was first; Mr. T. Leadbetter second; Mr. W. Broadey third. Class 17, for the same number.—First Mr. G. Lyon, gardener to J. H. Kenion, Esq., Rock Ferry; second Mr. P. Green; third Mr. F. J. Hartless. For six incurved, first Mr. J. Watson, gardener to F. S. Hannay, Esq., Upton, Chester; second C. E. Terry, Esq., Otterspool Cottage, Aigburth; third Mr. T. Eaton, gardener to John Parrington, Esq., Roby Mount, Roby. For six Japanese first Mr. J. Watson; equal second Mr. T. Eaton and

Mr. H. McFall, gardener to E. C. Leventon, Esq., Oakfield, Roby; third Mr. J. Breen, gardener to J. Mosford, Esq., Tattenhall, Chester. In the class for six incurved and six Japanese for those who have never won a prize, first Mr. H. McFall; second Mr. T. Elsworthy, gardener to A. R. Gladstone, Esq., Court Hey, Roby; third Mr. F. J. Hartless. Six Anemones.—Mr. W. Wilson; second Mr. J. Wilson, gardener to J. E. Reynolds, Esq., Landfield Park, West Derby; third Mr. A. R. Cox. Six reflexed.—First Mr. W. Wilson, second Mr. G. Eaton, third Mr. A. R. Cox. Twelve Pompons, in bunches of three.—First Mr. J. Watson; second Mr. D. McKellar, gardener to A. G. Steel, Esq., Bark Hill Road, Aigburth.

Chrysanthemums in pots were not shown in such quantity as in former years. Four large flowered, there was only one competitor—viz., Mr. T. Wilson, gardener to D. H. Williams, Esq., Fulwood Park, Aigburth. Four Pompons, first, Mr. H. Shone, gardener to R. Bennett, Esq., Weston House, Halewood. One Pompon, first, Mr. T. Wilson with a splendid trained plant of Marie Stuart. Second, Mr. Shone. One standard, first, Mr. T. Gowen, gardener to J. A. Bartlett, Esq., Lynton Lodge, Mossley Hill, with a grand plant of Mr. G. Glenney. Second, Mr. T. Learmont, gardener to Thomas Harding, Esq., Rydal House, Hutton; third, Mr. D. H. Johns, gardener to J. Revill, Esq., Hill Side, Wavertree. One pyramid, Mr. T. Wilson with a capital plant of Mrs. G. Rundle. Six untrained, first, Mr. D. McKellar, who showed an excellent six. Second, Mr. T. Gowen; third, Mr. T. Wilson. One untrained, first, Mr. D. McKellar with a fine plant of Prince of Wales. Second, Mr. T. Gowen; third, Mr. Quirk, gardener to W. Porter, Esq., Thingwall Hall, Birkenhead. Groups of Chrysanthemums, not to exceed 60 feet, were poorly represented, and with the exception of the first prize group (which was really a good one), call for no comment. First, Mr. J. Harrison; second, D. H. Johns; third extra, Mr. H. Shone. Miscellaneous plants were fairly well shown. For six stove and greenhouse plants, Mr. J. Jellicoe was first with a good coloured plants of Croton montfontainensis, and a well flowered plant of Anthurium Andreanum. Second, Mr. T. Healey, gardener to Colonel Wilson, Hill Side, Wavertree, who had fine pieces of Crotons I. aureus and Queen Victoria. Third, Mr. A. R. Cox. We have no space for the prize list in other plant classes.

The fruit classes were, with the exception of that for six dishes of Pears, all well represented. Grapes were exceedingly good, and there were no fewer than ninety-four bunches staged for the fifteen prizes offered. In the collection for six dishes of fruit (Pines excluded), Mr. J. Bennett, gardener to Hon. C. H. Wynn, Rhûg Corwen, was first with a magnificent bunch of Gros Guillaume Grape, also a good bunch of Lady Downe's, a grand Hero of Lockinge Melon, Hacon's and Beurré Diel Pear, and a dish of finely coloured Court Pendû Plat Apples. Second, Mr. J. Barker, gardener to J. W. Raynes, Esq., Rock Ferry, who had a capital bunch each of Gros Colman and Muscat of Alexandria Grapes, the latter fine in the berry, but a little short of colour. Third, Mr. M. Quirk. Two Pine Apples.—First, Mr. J. Bennet, with splendid examples. Second, Mr. J. Wallis, gardener to Ralph Sneyd, Esq., Keele Hall, Staffordshire. Two bunches Alicante.—Mr. J. Barker was a grand first out of eleven competitors with faultless examples. Second, Mr. J. Downham, gardener to E. H. Harrison, Esq., Eastham, Cheshire. Third, Mr. J. Hollingworth, gardener to J. F. Campbell, Esq., Woodseats, Uttoxeter. Extra, Mr. T. Elsworthy. Two bunches black, any other variety.—There were ten staged, Mr. Sivess, gardener to Samuel Smith, Esq., M.P., Prince's Park, Liverpool, was first, having superb bunches of Barbarossa. Second, Mr. T. Ferguson, gardener to Mrs. Patterson, Rock Ferry, with well finished bunches of the same variety. Third, Mr. McMasters, gardener to Sir U. T. Shuttleworth, Gawthorpe Hall, Burnley. Two bunches Muscat Grapes, first, Mr. W. T. Wyton, gardener to C. H. Bird, Esq., Crookhey Hall, Garstang; with noble examples. Second, Mr. W. Wilson, with beautiful bunches. Third, Mr. G. Middleton, gardener to R. Pilkington, Esq., Rainford Hall, with shapely bunches, and fine large berries; five lots staged. Two bunches white Grapes, Mr. J. Downham, first, with large bunches of Trebbiano. Second, Mr. J. Hollingworth, with same variety. Third, Mr. Sivess. Four bunches, two black and same number white; there were six staged. First, Mr. W. T. Wyton, with Alicante, fine, Muscat, Lady Downe's, excellent, and Bowood Muscat. Second, Mr. J. Hollingworth, with Lady Downe's, very good, Mrs. Pince's Muscat, a superb bunch, Golden Queen, and Trebbiano. Third, Mr. G. Middleton, with Muscats and Lady Downe's, very fine, Golden Queen and Alicante. Pears were not (with the exception of Pit-maston Duchess and Doyenné du Comice) shown in such quantity and quality.

We are reluctantly compelled to pass the awards in other classes that have been supplied to us, and can only insert the closing remarks of our correspondent—namely, The genial Chairman, Mr. White, Mr. Bridge, the energetic Secretary, and the members of the Committee have every reason to feel proud with the grand Show, and also in the way it was supported.

HULL.—NOVEMBER 19TH AND 20TH.

UNDER energetic yet prudent management from the outset, the Hull Chrysanthemum Shows have made distinct progress yearly, and now rank amongst the largest and most important in the kingdom. Last year the National Chrysanthemum Society had its provincial Exhibition at Hull, and large and fine as it undoubtedly was, the Show of the present year was larger and finer. The entries were never so numerous, nor the competition so good, and the prizes so keenly con-

tested. In class after class only a difference of one or two points could be found, and in more than one case the pointing was equal, general freshness and colour, with good arrangement, then turning the scale in determining the awards. No less than 3311 cut blooms were staged, superior stands largely predominating; indeed, it would not be just to describe any of them as inferior, though in the mixed classes one exhibitor would be strong in incurved and relatively weak in Japanese varieties, or *vice versa*. Not only were the open classes so well filled, but the amateurs' section was highly meritorious, and many stands that would have won prizes on former occasions failed to obtain awards this year, though the best of the losers were as near the winners as losers could be. In the specimen plant classes the competition was also excellent, and as compared with the exhibits of a few years ago the advance can only be described as extraordinary. Groups are always a strong feature at Hull, and this year the arrangements were better than ever, and the prizes harder to win. The dessert table competition was probably the largest in the kingdom, and the adjudicators must have experienced some difficulty in the discharge of their duties. Altogether the Show was both great and good, but the Artillery Barracks, large as they are, were not large enough for the visitors, who crowded into the four spacious rooms or courts in which the exhibits were displayed. The number of visitors as near as can be ascertained was upwards of 11,000, including 500 charity children and their teachers free of charge. In referring to the leading classes it will be convenient to follow the order of the schedule, but anything like a detailed report of the whole Show is out of the question.

Cut Blooms.—The chief interest centred in the class for forty-eight blooms, half incurved and half Japanese, in not less than thirty-six varieties, in which a 15-guinea challenge cup (given by Lieut.-Colonel Gleadow) and £15 in money were offered as the first prize, the remaining prizes being £10, £5, and £2 respectively. There were six competitors, and it was necessary to point most carefully five of the collections, though two of them were distinctly in advance of the others, and between those two splendid lots no more than two points of difference could be found out of a possible 288. As was announced last week (though the telegram was inaccurate in respect to the value of the cup) Mr. Peter Blair of Trentham became its possessor, and as he won it last year it becomes his property. Mr. J. Lambert, Onslow Hall, Shrewsbury, who has defeated his rival previously, this year was second. Mr. D. Heaney, Mossley Hall, Liverpool, third; and Mr. J. P. Leadbetter, Tranby Croft, Hull, fourth in the contest. The Trentham blooms were remarkable by their uniformity of excellence; the Shrewsbury specimens being fresher, and were awarded points accordingly, and though the back row incurved were exceptionally strong, the two front rows in Mr. Blair's stands were also of unusual weight, and turned the scale in his favour. We give the names of the blooms in both these fine collections. Mr. Blair's Japanese.—Back row: Mons. Bernard, Gloriosum, Lady Lawrence, E. Molyneux, Stanstead White, M. Baco, Mrs. A. Waterer, and W. W. Coles. Centre row: Avalanche, Etoile de Lyon, T. Stevenson, R. Brocklebank, Etoile de Lyon, Mrs. A. Waterer, M. Bernard, and Avalanche. Front row: Sunflower, A. H. Neve, E. W. Clark, Mr. J. Laing, Sarah Owen, Puritan, and Sunflower. Incurved.—Back row: Golden Empress, Empress of India, Alfred Salter, John Lambert, Alfred Salter, Empress of India, Queen of England, and Golden Empress. Centre row: John Doughty, Queen of England, Violet Tomlin, Lord Alcester, John Doughty, John Salter, Mrs. Coleman, and Princess of Wales. Front row: Mrs. Heale, Mr. Brunlees, Jeanne d'Arc, Miss M. A. Haggas, Eve, White Beverley, Nil Desperandum, and Miss M. A. Haggas. Mr. Lambert's Japanese.—Etoile de Lyon, Mrs. Beale, E. Molyneux, Mr. J. Laing, Boule d'Or, Etoile de Lyon, E. Molyneux, and M. J. Pigny. Centre row: Mrs. R. F. Jameson, M. C. Audiguier, Carew Underwood, Condor, Avalanche, Mrs. Jameson, Mrs. Wheeler, and M. Bernard. Front row: W. W. Coles (champion bloom), Belle Paule, Sunflower, J. Delaux, Madame Baco, R. Brocklebank, W. W. Coles, and Sunflower. Incurved.—Back row: Empress Eugénie, Alfred Salter, Lord Alcester, J. Lambert (two), Empress of India (two), Lord Alcester (champion incurved). Centre row: Hero of Stoke Newington (two), Princess Teck, Violet Tomlin, Mrs. Heale, Jeanne d'Arc, and Miss M. A. Haggas. Front row: Mabel Ward (two), Refulgence, Mrs. N. Davis, Barbara, Lady Dorothy, C. Gibson, and Lord Eversley. It will be seen the two champion blooms were in the Shrewsbury stands, and they were the only blooms in the Show to which the maximum (six) points were awarded. The incurved was of great depth, and the Japanese fine and brilliant in colour.

In class 2 for twenty-four blooms, half Japanese and half incurved, in not less than eighteen varieties, a 5-guinea silver cup was offered by Mr. Owbridge with the first prize of £5, and this, after a close contest, was adjudged to Mr. Blair, who had apparently reserved his strength for Hull, Messrs. Leadbetter and Heaney closely following in the order named, three or four other collections failing to obtain prizes. The first prize blooms comprised of Japanese, Etoile de Lyon, E. Molyneux, Gloriosum, Mrs. A. Waterer, Lady Lawrence, Sunflower, Mrs. Wheeler, Avalanche, W. Clarke, Puritan, Neve, and Madame Baco. Incurved: Empress of India, Golden Empress, J. Lambert, Queen of England, Miss M. A. Haggas, Mrs. Heale, John Salter, Lord Alcester, Violet Tomlin, Mrs. Coleman, Princess of Wales, and Mr. Brunlees. Mr. W. Heaney received the chief prize with the following twelve incurved blooms: Queen of England, Empress of India, Golden Empress, Mrs. Heale, Violet Tomlin, Miss M. A. Haggas, Hero of Stoke Newington, and Mrs. N. Davis; Mr. Leadbetter being a close second, and Mr. G. Apple-

ton, gardener, Thorgumbald Hall, a good third out of eight competitors. The corresponding class for twelve Japanese blooms was a very heavy one of thirteen fine stands. First honours fell to Mr. W. H. Hotham, gardener to W. R. King, Esq., North Ferriby. Second, Mr. W. Wettow, gardener to G. A. Carr, Esq., Waltham Grove, Grimsby. Third, Mr. B. Barrows, gardener to H. Bennett, Esq., Westlands, Grimsby; an extra prize being awarded to Mr. Heaney. The names of the varieties were not obtained. Excellent stands of Anemones were staged, Mr. Blair, Mr. G. Smith, Floral Cottage, Paull, and Mr. F. Mason, gardener to G. Bohn, Esq., Tranby Park, being adjudged the prizes in the order named for twelve blooms in good competition. The open reflexed class of twelve blooms, in not less than six varieties, was also excellently filled, the prizes being won respectively by Mr. R. Walker, gardener to Colonel Stacy Clithero, Hotham Hall, Brough; Mr. W. Davidson, gardener to F. W. Jameson, Esq., Estella; and Mr. J. E. Smith. Prizes offered for six blooms of Mrs. Falconer Jameson and Mrs. Alpheus Hardy only brought out one stand of each, Mr. John Browsho, Beverley, staging medium-sized blooms of the former, and Mr. P. Blair neat examples of the latter, both securing first prizes. Mr. W. Wilkinson, gardener to Mrs. Ross, Brough, was the most successful exhibitor of Pompons, and Mr. G. E. Smith of single varieties, scented varieties, and twelve sprays of any varieties for decorative purposes on stems not less than 10 inches above the board. Pompons are shown in bunches of three stems, and not less than three blooms on each.

In class 13, for exhibitors residing within twenty miles of Hull, 5-guinea silver cup was offered by Mrs. James Reckitt, with 3 guineas added by Messrs. E. P. Dixon & Sons, as the first prize for twelve blooms each of Japanese and incurved in not less than eighteen varieties, exhibitors in classes 1 and 2 not being eligible to compete. Twelve very good collections were staged, the prizes falling to Mr. W. Wettow, Grimsby, Mr. G. Wilson, gardener to James Reckitt, Esq., Swanland Manor, Brough, and Mr. J. S. Graham, gardener to G. Lawson, Esq., Newland Grove, Hull, in the order named. The first prize blooms in this class were—Japanese: Etoile de Lyon, Avalanche (two), M. C. Audiguier, Condor, Japonais, Sunflower, Sarah Owen (two), Belle Paule, Baronne de Prailly, and Mr. Matthews. Incurved: Lord Alcester (two), Golden Empress (two), Queen of England (two), Empress of India, Lord Wolseley, Barbara, Cberub, Jardin des Plantes, and Eve.

It was in this class that a case of disqualification occurred, which placed the Committee in an extremely awkward position. The first prize was at first awarded to an exhibitor who had staged in his incurved a very pale bloom of Golden Empress, which the Judges regarded as Lord Alcester, owing to a bloom of an unusually bright Golden Empress being placed in juxtaposition. It was eventually found, however, that this was staged as Golden Queen of England. This was not admitted as correct, and therefore the stand was disqualified as not containing the requisite number of varieties. In the meantime, however, the prizes were distributed, and the cup publicly handed to the disqualified exhibitor. His statement satisfied the Committee that there had been no intention to deceive, but the brilliant Golden Empress, with not a mark in its florets, was honestly shown as Golden Queen. If it had been admitted as such a protest would have been lodged, which must have been sustained, especially as an equally bright Golden Empress was shown in another stand. Admitting the honesty of the exhibitor, the Judges could not withdraw their disqualification, because they could not maintain their position against a formal protest. The difficulty arose from the public presentation of the cup before the revision, and the last we heard of the matter was a proposal to provide another cup of equal value as the most equitable way of settling a question of a very peculiar kind, that has never occurred before, and may probably never happen again. Also within the twenty mile radius prizes were offered for incurved and Japanese blooms in four classes in which there was strong competition, but all we can say is that in the first of these classes the prizes were won by Messrs. G. E. Smith, J. S. Graham, and G. Wilson; in the second by Messrs. W. Wettow, E. Wright, and J. S. Graham; in the third by Messrs. J. Hare, R. Dalby, and W. H. Clark; and in the fourth by Messrs. S. Higham, W. H. Clark, and J. Melbourne, there being nearly fifty entries in those classes.

A number of classes were provided for amateurs residing within ten miles of Hull who do not employ a gardener. The competition in all these classes was good, in some of them unusually so, and the exhibits throughout showed a very decided improvement on those of previous years. As a mark of recognition of the excellence of this section of the Show the Judges awarded one of the three certificates of the National Chrysanthemum Society to Mr. W. K. Sanderson, Thorgumbald, for his first prize stand of Anemone blooms, which were more meritorious than some staged in the open classes by professionals.

Before leaving the cut bloom department of the Show it is necessary to say that first-class certificates were awarded to the following varieties:—*E. W. Clark*, a rich bronzy crimson Japanese incurved of great merit and substance, exhibited by Mr. Blair. *Bouquet des Dames*, a large and very symmetrical white Japanese, equal to the finest bloom of Avalanche, but with shorter florets, some of them divided at the points and tinted, exhibited by Mr. Heaney. The plant is said to be very dwarf and free; the variety is not strictly new, but the blooms were very beautiful. *W. G. Drover*, a dark Anemone variety that has been previously described, exhibited by Mr. F. Mason, gardener to G. Bohn, Esq., Tranby Park, the blooms being of medium size, fresh, full, and rich in colour.

Plants.—Prominent in this section of the Show were the “groups of Chrysanthemums interspersed with foliage plants arranged for effect in a space of 100 square feet.” When it is remembered that Mr. George Bohn, to whom the Society owes so much for his generosity, offered a 20-guinea challenge cup in this class, and the Society a prize of £6 to the winner, also £5, £4, and £2 as the remaining prizes, strong competition was naturally expected. Strong indeed it was. The Hull groups have become famous by their excellence, and those of this year surpassed all previous efforts. There were seven of them, three on each side of the hall and one at the end. They were semicircular in outline, each with a Palm rising above the blooms to a height of 10 feet or thereabouts, and all of them margined with ornamental foliage plants and Ferns. The aggregate effect of these grand groups, for grand they were, was highly imposing. The Judges scanned them over and over again, but at each round of inspection paused the longest at a free and beautiful arrangement by Mr. G. Wilson, gardener to James Beckitt, Esq.; but a noble pile of handsome blooms and good foliage plants much more formally arranged by Mr. E. Wright, gardener to D. Wilson, Esq., pulled hard against it for a time, but eventually had to yield to the superior artistic taste and superb finish displayed in Mr. Reckitt's group, and to this the chief prize was awarded. It was referred to by one of the Judges as fit for a Royal drawing-room, and the most instructive arrangement of Chrysanthemums and foliage plants that had come under his notice. Its charm consisted in the pleasing diversity of the arrangement. It was unlike all the others, while the plants were in the best of condition. It is not easy to describe this group in a few words. Briefly, the centre plant was a large Kentia, under which, and quite below the arching leaves, were arranged dwarf Chrysanthemums bearing handsome exhibition blooms. From this somewhat hollow centre rather taller plants rose towards the front, and taller still right and left of the Palm towards the back, forming bold shoulders. Very prominent at intervals in the breast of the group were large plants, with numerous inflorescent spikes, of *Eulalia japonica variegata*. Towards the front were superbly coloured Crotons and *Dracenas* standing out bold and clear, so that their full beauty could be seen. The margin was of moss, in which small plants of the silvery *Chamaepuce diaantha* and *Panicum* interspersed with small *Coleus* and other suitable plants. Not a pot was visible, nor was there the least suspicion of packing and crowding throughout the arrangement. The more the group was examined the better it was liked, and though a few persons appeared to be taken by surprise at the first by the position it won, no long time elapsed before there were scarcely any left to dispute its supremacy. It was indisputably in advance of all others, and the N.C.S. Centenary medal was awarded to it as the most strikingly meritorious exhibit in the Show. It must not be supposed, however, that the other groups were not good also, the second prize arrangement above mentioned, also the third prize group of Mr. W. R. Willey, gardener to W. Wheatley, Esq., and the fourth prize, one arranged by Mr. G. Jarvis, gardener to B. Whittaker, Esq., were such as are rarely placed in those positions, while the three which failed to obtain prizes would have obtained them at many other shows. Practically, all the fault that could be found with them was the very common one of overcrowding. Plants appeared to have been pressed in as if to hide something behind, and they certainly spoiled the effect of each other. There was very little to choose between some of the groups in merit, and critical observers would perhaps note that the greater the freedom and less the crowding the higher were the awards. It will be interesting to see the Hull groups next year. The fine cup has to be won twice to be owned, and it may be expected the present holder of it, expert as he evidently is, will have to put forth his full strength to keep it in his possession. It can only be won by superior plants, freely, yet tastefully, arranged, with an absence of huddling and a better finish than is presented by a curve of red pots.

Only a little can be said about the specimen plants, but the few words must be words of high approval of the great progress that has been made in this section. The dwarf trained plants produced by Mr. J. S. Graham, which won the chief prize and the N.C.S. certificate, were worthy of a position in any show; while those of Mr. J. Hemming and Mr. H. Taylor, who were second and third respectively, were not far behind them. Standards were also good from the two first named exhibitors, who occupied the same relative positions, Mr. W. Mason, gardener to Major Dibb, being a very good third. Bush grown, but not formally trained plants, made a fine display. They were just such plants as are suitable for many conservatories, and Messrs. Hemming, Graham, Coupland, Mason, Grant, and Thirsk well merited the prizes they won.

Table and Floral Decorations.—In this section there were ladies' classes for dessert tables, bouquets, sprays, and picturesque arrangements of Chrysanthemums, resulting in great competition. In addition to the first prize of 4 guineas for a dessert table, Mr. Bohn added a piece of challenge plate, which was won by Miss Kathleen Todd of Tranby Park. We are compelled to pass the other exhibits, good as many of them were, and can only note that in the special class for children for the most tasteful arrangement of Chrysanthemums, with any kind of foliage and grasses, the silver flower vases offered by Mrs. Bohn were won by Miss Gertrude Harland, daughter of one of the Honorary Secretaries, with one of the prettiest effects in the room. Messrs. E. P. Dixon & Sons, Mr. Martin, and others added to the interest of the Show by large and meritorious exhibits not for competition.

It will be seen that the Exhibition was of great magnitude and high excellence, and if a National medal were offered for good management

Hull would win it, unless something better than the following facts can be presented from elsewhere. The large hall was cleared and ready for the Judges by ten o'clock, all other parts of the Show in a quarter of an hour afterwards; and lists of all the exhibitors, classes, and prize-winners were printed in schedule form and distributed at 2.30, the awards as they were made being conveyed to the printers by bicyclists.

In recognition of the good work that has been done at Hull in the advancement of Chrysanthemum culture, we have pleasure in giving the portrait of Mr. E. Harland, who has worked zealously and successfully for four years as Honorary Secretary with his able colleague, Mr. James Dixon. Mr. Harland has been a successful exhibitor before he was officially connected with the Society, and still takes pleasure in growing Chrysanthemums well at Cottingham, but does not think it desirable now to join in public competition. The Hull Chrysanthemum



FIG. 63.—MR. EDWARD HARLAND.

Society is singularly fortunate in all its officials, and to this circumstance is mainly due the prominent position it occupies in the Chrysanthemum world.

SCOTTISH HORTICULTURAL SOCIETY.

THE Exhibition held in the Waverley Market, Edinburgh, on the 20th, 21st, and 22nd, was in all respects a good one. Cut blooms were very largely represented, the Japanese being particularly fine, and also among the incurved varieties many specially fine examples of high culture were staged, though the number of badly dressed blooms was very great. Plants in pots were not so good by a long way as the cut blooms, and some of the best were not grown from single stems, but were pots of made up plants. Fruit was largely shown, splendid Grapes being staged, there being also a good display of Apples and Pears. Vegetables, again, were extra good, and staged in large quantities. One of the finest exhibits was a massive group of Chrysanthemums from the nurseries of Messrs. T. Methven & Sons, Princes Street, the blooms being of large size. Messrs. Todd & Co, Maitland Street, contributed a remarkably fine decorative stand, comprising a few Palms and other plants, with grand examples of bouquets, vase decorations, and flower baskets, nearly all composed of Chrysanthemums. Messrs. J. Laing & Son, Forest Hill, with Chrysanthemums contributed groups of *Pernettyas*. Messrs. Clibran & Sons, Altrincham; Mr. Erskine, George Street; Messrs. Dickson & Sons, Hanover Street, and others, had also exhibits on exhibition. The following were the chief items in the prize list:—

Cut Blooms.—The City of Edinburgh prize for forty-eight blooms, Japanese (not less than thirty-six varieties), £20 and the Association medal, £10, £5, £3, and £2, brought out five, the best of which was clearly that to which the Judges awarded the first prize. This was staged by Mr. Forbes, gardener to A. Holt, Esq., Crofton, Aigburth, and included deep and massive blooms. The duplicates were *Etoile de Lyon*, Mrs. F. Jameson, Stanstead White, Condor, Avalanche, Mrs. G. Atkinson, Sunflower, all extra fine; Ralph Brocklebank, E. Molyneux, Madame J. Laing. The singles were Carew Underwood, *Fimbriatum*, *Gloriosum*, *Boule d'Or*, Madame Baco, G. Daniels, M. A. Carrière, extra good; and Fair Maid of Guernsey, Sarah Owen, Jeanne Delaux, Holborn Beauty, Belle Paule, Criterion, T. Stephenson, J. Delaux, M. Bernard, Mrs. H. Cannell, Bouquet des Dames, A. H. Neve, Maisa, Meg Merrilies, Album *Fimbriatum*, Mrs. F. C. Priece, Puritan, Pelican, and Stanstead Surprise. To Mr. J. Carruthers, gardener to Mrs. Fleming, Corstorphine, the second prize was awarded. The third prize blooms came very close to the second, Mr. McHattie, gardener to the Marquis of Lothian, Newbattle, securing this. Mr. J. Wheeler, Jesmond Towers, Newcastle; and Mr. Rae, Sunlaws, Kelso, being fourth and fifth respectively.

The next class was open to cultivators living in Scotland. Eighteen Japanese and eighteen incurved, not less than twelve varieties of each. First prize, Scottish challenge cup value fifteen guineas, with the National Chrysanthemum Society's medal and £5. Five competitors

entered for this, the first and second prize blooms being very fine, the former having the better incurved and the latter the best Japanese. The first prize was awarded to Mr. J. Clark, Bannerfield, Selkirk. The best Japanese were E. Molyncux, Avalanche, Madame Audiguier, Elaine, M. Bernard, and Gloriosum. The incurved comprised grand samples of the Queen family, Violet Tomlin, and M. A. Haggas. Second, Mr. J. Machar, Corona, Broughty Ferry; third, Mr. H. Crichton, Bellcaise, Greenock; and fourth, Mr. Grossart, Oswald Road, Edinburgh.

In the class for twelve Japanese and twelve incurved were four entries, all of which were good. Mr. J. Foster, Wellwood Park, Selkirk, secured first place with very fine Japanese, Mons. Bernard, Avalanche, Sunflower, and Stanstead White extra. Of incurved Lord Wolseley, Nil Desperandum, and the Queens were extra good. Mr. Forbes, Aigburgh, was a good second; and Mr. J. Bell, Edenhall, West Ferry, a very good third. Mr. Forbes secured the first place in the class for twenty-four Japanese, not less than eighteen varieties, with fine bold flowers; Mr. Carruthers a good second; and third Mr. A. Thorburn, Valleyfield, Penicuik. Mr. Forbes was again first in the class for twenty-four incurved, not less than twelve varieties; his blooms, though rather old, were large and of good finish. Mr. Clark was second with less even but good blooms. For twelve Japanese Mr. Forbes again secured the first place with very fine examples; Mr. Carruthers second; and Mr. Thorburn third. No fewer than fourteen lots were staged in this class. Mr. Carruthers, with fine Avalanche, secured first for six blooms of a white Japanese variety; Mr. Carruthers, with Boule d'Or, secured first in the corresponding class for six yellow blooms; and Mr. Forbes, with Etoile de Lyon, was first in the class of six blooms, purple or crimson. The six varieties Japanese brought out some twenty boxes, Mr. Geddes, Knock Castle, securing the premier place. For twelve incurved eight staged, Mr. J. Foster being first with a very fine lot; Mr. Forbes second. Mr. J. Clark, in the class for six blooms, was a good first. In the class for six of one variety some notable blooms were staged, the first prize going to Mr. J. Clark for six medium Golden Empress of fine build and beautiful finish. Mr. A. Watt, Blackhouse, Skelmorlie, second with large but rougher Empress of India. For twelve reflexed Mr. J. Short, Hummers-knot, Darlington, secured first place with large and good examples of the leading sorts. In the classes confined to amateurs Mr. A. Brydon, Tweedbank, Innerleithen, had some extra fine Japanese. Messrs. R. B. Laird & Sons, West Coates, set up good blooms in the trade class for forty-eight blooms.

Plants.—The best plants were the six large flowering, with which Mr. D. Jardine, Ravelston, Edinburgh, secured the chief prize. Mr. Reid, Rockfield, Dundee, with good dwarf trained plants, second, and Mr. J. Preston, Falcon Hall, third. Mr. Grossart was the only exhibitor of a group of plants, Mr. Jardine and Mr. Donaldson being first and second respectively for groups of Chrysanthemums. Some good Roman Hyacinths were shown by Mr. McIntyre, The Glen, Innerleithen, and prizes were offered for various plants in 6-inch pots.

Fruit.—Some extra fine Grapes were staged, prizes of the Association medal, and £10, £5, £3, and £2 bringing out grand clusters in competition for eight bunches. Here Mr. McHattie was easily first with grand examples of Alicante, Gros Maroc, Muscat of Alexandria, and Chasselas Napoléon. The second prize was awarded to Mr. Leslie, gardener to A. Coates, Esq., Pitcullie House, Perth, but great dissatisfaction was expressed over this award, the third prize lot from Mr. Murray, Polmont, Falkirk, being very much better looking in every respect. Fourth, Mr. Pottar, Whitehall, Carlisle. Mr. Leslie was first for four bunches of Grapes, and Mr. Murray second. Good examples of Muscat of Alexandria, Gros Colman, Alicante, and Lady Downe's were also shown. Mr. McIntyre, The Glen, had the two best Pine Apples. Mr. McIndoe, Hutton Hall, Yorks, second, and Mr. McKelvie, Biosmouth, Dunbar, third. Mr. McIndoe had the best Pine Apple. Mr. Hunter, Lambton Castle, Durham, second, and Mr. McKelvie third. Mr. McIndoe was the only exhibitor of orchard house fruit, and was awarded the first prize. For a collection of twenty varieties of Apples and ten varieties of Pears, Scotch grown, there were eight entries. Here Mr. Day, Galloway House, Garlieston, was first, all being highly coloured for the north. Mr. Brotherston, Tynninghame, Prestonkirk, second; Mr. Lamont, Kennet House, Alloa, third; and Mr. Murray, Culzean Castle, Ayr, fourth. Mr. Day was again first for a collection of eighteen sorts of Apples and six of Pears, Mr. Cairns, The Hirsell, Coldstream, second, and Mr. Brotherston third. There was also smaller collections well contested, and a fair lot of market garden grown fruit. Mr. Smith, Prince's Street, with a table of foreign and home grown fruit secured the prize in the fruiterers' class. By Messrs. Thomson, Clovenfords, were shown some Grapes of good quality, illustrative of the beneficial effects resulting from the employment of their Vine manures.

Vegetables.—In the class for thirteen varieties (£5, £3, £2) eleven exhibitors staged. The first prize was awarded to Mr. Robertson, Hartrigge, for a fresh lot, in which were good Leeks, Vegetable Marrows, Tomatoes, Stadtholder Cauliflower, and Onions. Second, Mr. Harper, Tulliebolton House, Bankhead, with a fine lot. Third, Mr. Bigham, Edgerston, Jedburgh. For six sorts of vegetables Mr. Hall, Kelso, was first, Celery being extra fine, Mr. Harper second, and Mr. Potter, Seaccliffe, North Berwick, third. Of single dishes remarkably fine Tomatoes, Celery, Cauliflowers, Leeks, Mushrooms, Carrots and Onions were shown.

The Exhibition, notwithstanding, the ample promenade space left between the several ranges of tables, was oftentimes inconveniently crowded, this no doubt resulting in a great degree from the presence of Lieutenant Godfrey and the band of the Grenadier Guards.

YEOVIL.—NOVEMBER 19TH.

THE Exhibition of Chrysanthemums, fruits, flowers, and vegetables, which was held in the municipal building on Wednesday in last week, may be pronounced to be the best of the kind hitherto held in this important and flourishing Somersetshire town, and the Committee and Hon. Secretary (Mr. E. H. Oakley) are to be complimented for the admirable manner in which the details of the Show were arranged. The most successful exhibitor in the plant classes was Mr. Crossman, gardener to J. Brutton, Esq.; Mr. Copp, gardener to W. Erle-Drax, Esq., Holnest, Sherborne, in the cut bloom classes; Mr. James Lloyd, gardener to Vincent Stuckey, Esq., Langport, in the fruit classes; and Mr. Crossman and Mr. C. J. Bowers, gardener to T. Halford, Esq., Castle Hill, Cerne, being the most successful in the vegetable classes.

Groups.—Several good groups were arranged in the open class, Mr. Crossman taking first honours with a grand group. Plants, flowers, and perfect finish of arrangement were everything that could be desired. The plants forming the outline of the group were in 3-inch pots, having rich foliage and large fresh flowers for plants growing in such small pots. Mr. Gillam, gardener to J. S. Cable, Esq., Yeovil, was a good second, and Mr. Anthony, gardener to Thomas Moore, Esq., was a creditable third.

Three groups of miscellaneous plants were arranged. Mr. Biss, gardener to Jabez Bradford, Esq., Yeovil, was first—Palms, Arum Lilies, Poinsettias, Heaths, Cyripediums, Dracenas, and Crotons intermixed with well-selected plants of Chrysanthemums, and finished off with an edging of Maidenhair Fern (*Adiantum cuneatum*) and Primulas. Mr. W. Appleby, gardener to T. W. Dampier-Bide, Esq., Yeovil, was second, and had he left out one-half of the plants employed his arrangement would have been accorded a higher position. Mr. Kidley, gardener to W. E. Hall, Esq., East Coker, Yeovil, was a good third.

Plants.—Mr. Crossman was first for three trained plants of reflexed, with good plants of Pink Christine, Felicity, and Peach Christine; first for one reflexed with Mrs. Forsythe, first for three incurved, first for three Japanese, and first for specimen Japanese, staging good plants in all the classes. Mr. J. Allen, gardener to the Rev. W. S. Cattes, West Coker, Yeovil, had the best specimen incurved; and Mr. Anthony the best Pompons, showing nice plants.

Table plants, &c., were shown well by Mr. Lloyd, Mr. Appleby, and the Rev. M. Hankey's gardener, who took the prizes in that order. Mr. Bowers had the best two Palms (as regards their suitability for table work); and Mr. Lloyd was second for larger plants. Double white Primulas were shown in fine condition by Mr. Anthony, Mr. Allen, and Mr. Lloyd, who were respectively first, second, and third. Berried plants (*Solanums*) were shown by Mr. Biss, Mr. Kidley, and Mr. G. Troyte-Bullock, North Coker, Yeovil, to whom the prizes went in the order indicated. Mr. Hobby, gardener to the Hon. Sir Ponsonby Fane, Brymton House, Yeovil, also staged some dwarf well-berried *Solanums*, but not for competition. Violets in pots, having fine healthy foliage, and a profusion of large fresh flowers, which filled the building with their delicious fragrance, were staged by Messrs. Kidley, Troyte-Bullock, and Crossman, the latter losing a chance of gaining a higher position on account of his securing the flowers to sticks; Marie Louise was the variety grown. Two finely grown half dozen plants of Mignonette were shown by Messrs. Anthony and Crossman, who took the prizes in the order in which their names appear.

Cut Blooms.—Several good stands were put up in the three-guinea cup class, twenty-four blooms (twelve incurved and twelve Japanese) being required. Mr. Copp was a good first, staging Etoile de Lyon, Edwin Molyneux, Boule d'Or, Mrs. Wheeler, Gloriosum, Madame Laing, Mr. H. Cannell, Madame C. Audiguier, Thunberg, Sunflower, and Carew Underwood, all in fine condition as regards size, freshness, and colour of blooms; and the same remark applies to incurved varieties, in which Lord Alcester, Empress of India, Alfred Salter, and such like varieties showed up to advantage. Mr. Crossman was second, the Rev. M. Hankey third, and Mr. Lloyd fourth. Mr. J. S. Cable was a good first for a stand of twelve Japanese, Mr. Biss being second. Messrs. Copp and Lloyd were first and second in that order for reflexed varieties, showing, among others, fine blooms of the Christine family, King of the Crimson, and Cullingfordi. Floral ornaments were shown well by Mrs. Mitchel, North Coker, and Miss A. E. Brutton.

Fruit was well represented. Messrs. Lloyd and Crossman were respectively first and second for collections of six kinds, showing good black and white Grapes, Pears, Apples, &c. Col. Macgregor's gardener, Mapperton House, Yeovil, had the best two bunches of Black Alicante; Mr. Lloyd and Mr. Connolly, gardener to J. R. C. Talbot, Esq., Rhode, Uplyme, Lyme Regis, being second and third with the same variety. In the Any other black class Mr. Lloyd was first, showing well-coloured Gros Colman, Col. Macgregor being second with fairly well-coloured Mrs. Pince; and Mr. Hobby was third with well coloured but small bunches of Black Hamburg. Mr. Connolly was far away and ahead in the Muscat class, staging two tapering solid bunches, consisting of large, clean, fresh, even, and highly coloured berries, the bunches being about 4½ lbs. each, truly grand examples of this noble Grape for the time of year. Col. Macgregor and Mr. Crossman were second and third. In the Any other white class Col. Macgregor, Mr. Lloyd, and Mr. Crossman were the prizewinners, all staging fairly good bunches of Foster's Seedling.

Pears.—Captain Dymond, Charminster, had the best dish of dessert Pears, showing good examples of Beurré Diel; Mr. Lloyd had the best dish of culinary Pears, staging good fruits of Uvedale's St. Germain.

Mr. Lloyd also had the best three dishes of dessert Apples, staging good sized, clean, even, bright fruits of Ribston Pippin, King of the Pippins, and Cox's Orange Pippin; Mr. Kidley being a good second; his trio including "Coker Beauty," a very handsome and excellent Apple; Mr. Hobby being a close third. Mr. Lloyd, Mr. Crossman, and Mr. Kidley were the prize winners in the class for culinary Apples, which, like the dessert varieties, were shown well, and in goodly numbers. Messrs. Copp, Lloyd, and Kidley were first, second, and third for dishes of nine Tomatoes, showing good fruits. Messrs. Copp, Bowers, and Lloyd staged the best three dishes of Mushrooms.

Vegetables.—Collections of ten kinds were shown in force; the quality being good, and the exhibits neatly set up. Messrs. Crossman, and C. J. Bowers were first and second in that order for admirable produce, including Seakale, French Beans, and Asparagus, Mr. Copp being a good third; Messrs. Crossman and Bowers were the only exhibitors in the class for a collection of salad, making a grand display, including almost every known salading ingredient, which were neatly arranged and greatly admired. Non-competing exhibits: Mr. Scott, Merriott, and Messrs. Jarman, Chard, staged a grand lot of Apples, which afforded a capital opportunity for intending planters present making a selection. The exhibits were large, clean, and many of them very highly coloured, thereby greatly adding to the general effect and utility of the Show.—W.

WATERFORD (IRELAND).

It was unfortunate the day was so unfavourable, and this prevented a greater number admiring what was most undoubtedly the finest autumn Show the Waterford Horticultural Society has yet held. Chrysanthemums, though the *pièce de résistance*, had attention divided with a fine show of fruit, and a really good exhibition of vegetables and farm produce, especially those entered for Messrs. Sutton's of Reading, special prize. A £5 cup was presented by Raymond de la Poer, Esq., J.P., to be competed for, but the minimum number of four entries, twenty-four blooms each, not having come forward, it was withheld, first prize of £2 going to Lord Besborough, Piltoun, and second to Hon. Dudley Fortescue. It is only fair to say Mr. Crawford (Captain de la Poer's head gardener) was interdicted from winning this prize given by his master. The blooms were fair, and mostly the varieties about to be named immediately except last year's varieties, twenty-four in number, twelve distinct.

The class of six plants in pots, distinct varieties, brought six competitors, and formed a very effective floriferous bank across the side of the large Town Hall, where the Show was held. After some difficulty by the Judges in deciding where the balance of merit lay the first prize went to C. E. Denny, May Park, and second to Captain de la Poer, Kilcronagh. The last named gentleman also had first prize amongst seven entries for the best specimen plant in the Show. A new and effective departure, and that every show should have, was the introduction of prizes for groups. Twenty square feet of space was allotted, and there were three entries. It was most difficult to say where most merit existed between Mr. Goff, Grenville, and Mr. C. E. Denny, but the prizes went ultimately in that order. The plants and blooms formed a regular sloping floral bank.

Cut Blooms.—The Hon. Dudley Fortescue was the only competitor to enter against so formidable an opponent as Capt. de la Poer, the second and first prizes being in the order named in the great sections of incurved, Japanese, reflexed, and Anemone flowered. In Mr. Crawford's first prize incurved, and which were little short of perfection, the blooms were staged in the following order: Lord Alcester, Alfred Salter, Golden Empress of India, Alfred Salter, Lord Alcester, and Lord Wolseley. Second row: Prince Alfred, Jeanne d'Arc, Lord Wolseley, Lord Alcester, Prince Alfred and Miss M. A. Haggas. Third row: Emily Dale, Princess of Wales, Miss M. A. Haggas, Prince Alfred, Mrs. Norman Davis, and Hero of Stoke Newington. Front row: Mrs. Norman Davis, Princess of Teck, Hero of Stoke Newington, Mrs. Norman Davis, Violet Tomlin, and Princess of Teck. Mr. Crawford's Japanese were very fine, and from their immense size I suggested a large space for staging each bloom. It will be seen from the names following many of the blooms were staged for the first time. Front row: Baronne de Prailly, Volunteer, Balmoreau, Sunflower (fine), Mrs. Mahood and Mons. Bernard; next, Ralph Brocklebank, Stanstead Surprise, Thomas Stephenson, Pelican, Jeanne Délaux, George Daniels and Ralph Brocklebank. Top row: Jeanne Délaux, George Daniels, Mrs. Mahood, Sarah Owen, Madame Baco, and Sunflower. The top row was remarkable for two blooms at each end of Etoile de Lyon, simply of immense size, Japonais, Stanstead Surprise, Baronne de Prailly and Boule d'Or. Whoever beats Mr. Crawford in Dublin will have "a stubborn foe" to contend with. Last year the first stand was disqualified for having in the reflexed class the reflexed Japanese Amy Furze. Curious! Mr. C. E. Denny was disqualified this year for exactly the same reason in the second reflexed. There were three sections for zonal blooms, single and double, for fruit, vegetables and farm produce, which would require much more space than there is any chance just now to expect from you. I may say the principal prize winners were Messrs. Goff, Grenville; N. E. Power, Belview; Hon. Dudley Fortescue, Summerville; T. W. Anderson, Grace Dieu; C. P. Bolton, Galway House—the courteous and efficient Hon. Secretary; Mr. C. E. Denny, May Park; Mark de Lindre, Crown solicitor; R. T. Carew, Ballinamona Park; John and Samuel Strangman, J. H. Jones, Mullinabro', &c. Much credit is due to Messrs. C. P. Bolton and J. A. Power, the Hon. Secretaries; and the Judges were Messrs. Munro, Kilkenny; Aherne, Duke of Devonshire's, Lismore; and your correspondent.—W. J. MURPHY, *Clonmel*.



GARDENERS' ROYAL BENEVOLENT INSTITUTION.—As an example of the great good this splendid Institution is doing, we are authoritatively informed that a sum of no less than £2648 has been distributed in pensions this year, £1700 being during the same time added to the reserve fund. At the last meeting of the Committee it was decided to make an addition of twelve pensioners in January, making a total of 158. The Institution is deserving of extensive support.

— **CHRYSANTHEMUM SHOWS.**—Reports of these have continued to flow in in unexampled numbers. We have been compelled to abridge some and hold a few over. The season, however, is drawing to a close, and we do the best with what our friends obligingly send us while it lasts.

— **DAHLIA IMPERIALIS.**—A beautiful spray of this handsome single Dahlia bearing twenty flowers and buds, the former 6 to 7 inches in diameter, has been submitted to us by Mr. F. Smith, gardener to R. Muir, Esq., Heathlands, Wimbledon. The plant has been grown under glass for two years.

— **AT Welton House Gardens, Yorkshire,** there is a fine plant of **EUPHARIS GRANDIFLORA** which has flowered eleven times in seventeen months. At the present time it has fourteen spikes, six to eight flowers on a spike. **Pancratium fragrans** has been good—seven spikes, some of them with fifteen flowers on one spike.—H. P.

— **THE KENT COUNTY CHRYSANTHEMUM SOCIETY.**—The third annual dinner of the above Society will be held at the Bridge House Hotel, London Bridge, S.E., on Wednesday evening, Dec. 3rd, at 6.30 for 7 o'clock. Tickets will be 3s. 6d. each. The Committee hope that members will induce as many friends as they can to attend.

— **SELECTIONS OF CHRYSANTHEMUMS.**—Will Mr. E. Molyneux kindly give me the names of the best twenty Japanese, twenty incurved, eight reflexed, eight Anemones (large flowered), and eight Pompons to grow as exhibition cut blooms, excluding those varieties which are uncertain or difficult to grow, as I am only in a position to grow about 150 plants altogether.—WEST RIDING, *Yorks*.

— **A VERY successful CHRYSANTHEMUM SHOW** was held at Colchester last week, and we regret that a full report cannot be given. Lord and Lady Brooke of Easton Lodge were present, and their gardener (Mr. H. Lister) had the satisfaction of winning the premier prize for twelve incurved and twelve Japanese blooms in a strong class of eight competitors. The blooms were extremely good, and the N.C.S.'s silver medal was also accorded to Mr. Lister for a grand bloom of Etoile de Lyon as the best in the Show. Mr. Flight of Winchester also exhibited well, taking the second place in the class named.

— **ROYAL VISIT TO READING.**—We understand that in connection with the forthcoming Royal visit to Reading, and the ceremony of installation of H.R.H. the Duke of Clarence and Avondale as Grand Master of the newly constituted province of Berks, the question of where to serve the luncheon has been a difficulty, but Messrs. Sutton and Sons have kindly placed one, or more if required, of their large seed stores at the disposal of the Festival Stewards for this purpose. The Grand Secretary visited Messrs. Sutton's premises, and expressed himself perfectly satisfied with all the proposed arrangements, which will be carried out, subject to the Prince's approval.

— **RAINFALL NEAR LANCASTER.**—Having seen the amount of rainfall for the past few months, as sent by correspondents to the Journal, I send you the amount we have registered here for the past three months. August.—Total rainfall for the month, 6.75 inches, rain falling on twenty-three days; largest fall in twenty-four hours, 1.25 inch. September.—Total for the month, 5.375 inches, rain falling on seventeen days; heaviest fall in twenty-four hours, 1.375 inch. October.—Total for the month, 3.625 inches, rain falling on sixteen days; heaviest fall in twenty-four hours, 0.75 inch. November.—Total up to the 24th, 6.125 inches, rain falling on twenty-one days out of the twenty-four.—W. G.

— THE WILLIAM HOLMES' MEMORIAL FUND.—SPECIAL FLORAL FETE AND BENEFIT.—The Directors of the Royal Aquarium, Westminster, in consideration of the late Mr. William Holmes' long connection with that Institution as Hon. Secretary of the National Chrysanthemum Society, and as Manager of the flower shows, have generously offered to give a benefit performance in aid of the Holmes' Memorial Fund throughout the day of Wednesday, the 17th of December next. In order to render the occasion as attractive as possible, and with a view to augmenting the Fund, it has been arranged that a Floral Fête and Bazaar shall be held in the building on the same day. The Committee will be grateful for a few flowers to furnish the stalls, and though flowers are scarce at this time of year it is essential to the success of the Fund that it be proceeded with at once, and an earnest appeal is made for assistance in so laudable an object. Flowers may be made into sprays or buttonholes, or packed separately, and should reach the Royal Aquarium before 11 A.M., on the 17th of December, addressed to Mr. Lewis Castle. Fruit or miniature plants will also be acceptable, as the entire proceeds of the Bazaar will be devoted to the Fund. Tickets of admission are issued at 1s. each, and as those sold will afford a substantial addition to the Fund, it is especially desired that application be made at once to the Hon. Secretary—MR. LEWIS CASTLE, *Hotham House, Merton, Surrey*.

— LETTUCES.—I am rather interested in Lettuces, having to keep a continuous supply, and necessarily try new varieties when they appear worthy. A variety named Blond Blockhead is recommended on page 397. I have looked into Vilmorin's list for the current year, and fail to find any such name, as indeed I hardly expected. Is it the Blonde Géante? From the description it would appear as if it were. Perhaps the writer of the note referred to will kindly say. If so, the added synonym of Blond Neapolitan would carry its own recommendation, as there is perhaps no better summer Cabbage Lettuce than the old Neapolitan. I may add that very few varieties have escaped a trial at my hands, and though there are some large varieties I do not think there is a more useful than Hicks' Hardy for using from early summer until the next spring, and for bridging any space betwixt these periods Tom Thumb is better than anything I have ever had through my hands.

— A GOOD WINTER TURNIP.—Three years ago I had for trial a French Turnip for the winter season, and have found it so tender and good that I name it for those who may not have seen it. It is catalogued by Vilmorin as Des Vertus, and is more like an overgrown White Radish than a Turnip.—B.

— "THE HORTICULTURAL DIRECTORY" FOR 1891.—This work is now ready, and is the largest and most comprehensive issue that has yet appeared. Besides the complete register of the addresses of all the most important establishments and persons connected with horticulture in the United Kingdom and on the Continent, it contains useful information on Ground Work: A Table of the Cost of Land Draining per Acre, Average Cost of Digging Drains, Excavating and Removing Soil, Table Showing the Number of Cubic Yards of Earth in each Rod. Planting and Sowing.—Tables for Planters. Certificates Awarded by the Royal Horticultural Society from November, 1889, to October, 1890; and a copious list of garden receipts on a great variety of subjects. Though the work is much enlarged the price remains the same as before, 1s., post free 1s. 2d., from the office, 171, Fleet Street, London, E.C.

— TRANSPLANTING SHRUBS.—Reverting to this subject again it is to press the fact that properly prepared plants may be removed with comparative ease and speed, and with certainty of success. Wherever valuable shrubs, trees, or coniferous subjects are running a risk of spoiling through overcrowding, all that is necessary is to cut back the roots in a thorough manner. If twenty or thirty years of age it may be wise to cut one-half the roots one year, and go round the entire circle the next, removing either the following autumn, or even spring or summer. Where it is necessary to protect the ball thin boards of beech laced to the side of it is preferable to any other method, but as a rule no such means of securing the soil is necessary. I have looked round a number of large and old specimens removed twelve months ago, and it would have been impossible for a stranger to have pointed out the lifted specimens from those that were not interfered with. Possibly the best period for transplanting is in showery weather during summer. The shrubs go on as steadily as Pelargoniums planted out of pots.—B.

— MR. JOSEPH MALLENDER sends his usual summary of METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP,

NOTTS, in October; 50 feet above mean sea level. Mean temperature of month, 49.8°. Maximum on the 12th, 70.5°; minimum on the 28th, 22.9°. Maximum in sun on the 3rd, 118.0°; minimum on the grass on the 28th, 14.3°. Mean temperature of the air at 9 A.M., 50.4°; mean temperature of the soil 1 foot deep, 50.6°. Nights below 32°, in shade two, on grass fourteen. Total duration of sunshine 115.5 hours, or 36 per cent. of possible duration. We had six sunless days. Total rainfall, 1.01 inch. Rain fell on eleven days. Average velocity of wind, 9.6 miles per hour; velocity exceeded 400 miles on four days; velocity fell short of 100 miles on five days. Approximate averages for October: Mean temperature, 48.2°; sunshine eighty-three hours; rainfall, 2.84 inches. A very fine mild and dry month; more sunshine than in any of the previous nine years. A shower of snow fell on the 26th, and the frost on the 28th was nearly the sharpest we have ever had in October.



CATTLEYA LINDENI.

UNDER the above name M. Linden of Brussels exhibited a beautiful Cattleya at the Royal Horticultural Society's meeting on October 28th last, when the Orchid Committee accorded it a well-deserved recognition. It is one of the C aurea type, but appears to have resulted from a natural cross with some other Cattleya, perhaps C. gigas, this view being also that adopted by Mr. R. A. Rolfe of Kew. In a letter now before me he says:—"I feel doubtful if it is a variety of C. Dowiana aurea, or a hybrid with C. gigas, in which the former preponderates, and rather incline to the latter view. I wish all hybridisers would cross the two both ways; it would surely pay them to solve the parentage of Hardyana, Maniana, and this one, for I suspect hybridism is behind these forms."

Whatever be its origin there can be no doubt respecting the attractions of the flowers on the plant as shown, the colouring being both rich and delicate in the extreme. The sepals are pale mauve nearly white, the petals suffused with soft rose and veined with white, while the lip possesses an evenly fringed intensely rich magenta apical half margined with clear bright gold, and veined with the same tint in the throat on a crimson base. The flower is of moderate size, but light and graceful contour, and probably as the plants become stronger the flowers will increase in size. I understand that it was imported early in the present year, and it will certainly take a place amongst the best forms of the group to which it belongs.—L. CASTLE.

IMPORTED ORCHIDS.

(Continued from page 443.)

DENDROBIUM.—The value of Dendrobiums is well known, and they may be classed amongst the most useful Orchids. The species vary greatly, some producing pseudo-bulbs only an inch or two long, whilst others attain the length of 6 or 7 feet. It is difficult to state any strict rule for Dendrobies, there being several sections, some of which grow better on blocks, others in baskets, and some in pots or pans. The same rule applies to Epidendrums as to Dendrobies. E. erectum grows to a height of 8 or 9 feet, and slender, and some only attain the height of so many inches.

LÆLIA.—Some species of Lælia are very showy and extremely fragrant. With regard to imported Lælias they may be placed on blocks, in baskets, or potted at once; the condition in which they have arrived will be the best guide. If the growths are advanced they will require every encouragement; if, on the other hand, they are dormant it will be most advisable to keep them quiet till they start.

LYCASTE.—The genus Lycaste includes two or three species that are well worth cultivating, L. Skinneri being the most generally useful. They will, nevertheless, require much about the same treatment, and may be potted as soon as received in a light compost, all succeeding best in pots or pans and placed in a cool stove, requiring little water till growth has commenced.

MASDEVALLIA.—Nearly all the species of Masdevallia are great favourites with Orchid fanciers. Some of the most showy kinds, such as M. amabilis, M. Harryana, M. ignea, M. Lindenii, M. tovarensis, and M. Veitchiana are extremely useful. They are rather difficult to import owing to the fact that they are found at high elevations, where it is naturally cool and moist; the great difficulty

is in bringing them through the hot plains, the great variation in temperature proving fatal to thousands of plants. If they reach this country alive they generally lose a quantity of their leaves. No time should be lost in having them potted and placing them in a cool house. *Masdevallias* should never be allowed to become dry at the roots at any time.

ODONTOGLOSSUMS.—Everyone that knows what an Orchid is will be familiar with at least one species—viz., *O. crispum*. This species is cultivated and imported more extensively than any other, and anyone who has been a frequent visitor to the London auction rooms could not fail to observe in what unpromising condition the importations are received. Often have paper bags of

PHALÆNOPSIS—*Phalænopses* have been imported rather extensively of late by two or three of the leading London nurserymen, and small plants were at one time offered at 5s. each. So many plants have been lost in transit to this country that it has been found advisable to establish the plants on sticks or pieces of wood before sending them home. If they are much shrivelled when received they will be greatly benefited by spreading them out on a board or something similar for a short time till their leaves have become a little more firm, after which they may be placed in baskets or shallow pans, and suspended from the roof in the warmest stove.

PLEIONE.—These will in all probability be imported in large



FIG. 64.—CATTLEYA LINDENI.

O. crispum been sold for 10s. Probably one-half of the plants that were in the bag were nearly dead when they were bought; but the purchaser is well pleased with his bargain, for he knows that if he can only induce three or four pieces to grow he will have a cheap ten shillings' worth at the expiration of a couple of years. *O. crispum* and all the other species belonging to that section may be potted as soon as convenient in a mixture of peat and sphagnum, with a little broken charcoal, and placed in a cool close house for a time till they commence growing, when more air can be admitted, for they delight in a cool moist atmosphere.

ONCIDIUM.—This is an extensive genus, some species of which are very showy, yellow being the predominating colour in the flowers of many species. *Oncidiums* are extremely variable, some species having pseudo-bulbs longer than one's fist, whilst others are quite destitute of pseudo-bulbs; *O. Lanceanum* and *O. luridum* represent the latter section. It will be safe to say that all the species possessing pseudo-bulbs may be treated as advised for *Odontoglossums*, the majority of them coming from cool districts; while, on the other hand, the *luridum* section requires the temperature of the East Indian house.

masses, and should therefore be divided. There will be two or three-sized pseudo-bulbs. Each size should be potted separately and suspended near the glass in the stove or Orchid house. A mixture of fibry peat, loam, and sphagnum will suit them admirably. If the young growths are far advanced when imported great care should be taken not to injure the young roots, as they are produced with the growths.

SACCOLABIUM.—What has been advised in this paper for *Aerides* will apply with equal force to *Saccolabiums*, as they are very closely related to each other in general appearance. To grow *Saccolabiums* successfully they require a very high temperature.

VANDA.—These form noble plants in the Orchid house when not in flower, and when *V. tricolor* and *V. suavis* are well in flower they are very handsome. Imported plants may be treated like *Aerides*, and when established should be potted in sphagnum and charcoal.

I have only named a few of the most useful genera. It would be impossible to lay down any rigid rule for the guidance of amateurs, as so much depends on the condition in which Orchids arrive, also whether they are from cool or tropical regions.—L. C.

CHRYSANTHEMUM SHOWS.

ISLE OF WIGHT.

A CONSIDERABLE advance has been made in the cultivation of the Chrysanthemum throughout the Island since this Society held its first Exhibition in the Drill Hall, Newport, six years since. The schedule is a long and most varied one, divisions being separately made for nurserymen, gardeners, amateurs, ladies, and cottagers, while there are a few open to all. The several groups and specimen plants are arranged around the sides of the spacious building, while the cut flowers are arranged down long parallel tables running down the centre of the building. All available space was filled, and the arrangements well carried out by the Hon. Secretary, Mr. Horace Groves, Mr. Cave, and Dr. Groves, one of the many Vice-Presidents and Chairman of the Committee, who discharged their duties with unfailing courtesy and ability.

Groups and plants form an important part of this Exhibition, being numerous represented in all the divisions, and those in the cottagers' class evincing nearly as much quality and training as in the corresponding divisions. Mr. Morris, gardener to Captain Eveleigh, was prominent in the gardeners' division, and secured several first prizes for examples which displayed much cultural skill. In the nurserymen's groups the first and second awards were made to Mr. J. Sanders and Mr. R. J. Gould in the order of their names, and in the amateurs' Miss May Buckell was placed first and Mr. J. Brown second. Miss Buckell's arrangement was very tasteful and the quality superior. She was, we were informed, a close student of works written on the cultivation of this flower. The back plants were rather faulty, otherwise it was a most creditable group. Mr. Brown's was a very good group, but he had very faulty front plants. In the cottagers' class Messrs. Taplin and Webber shared the awards.

Cut blooms were well shown. The principal classes were for twenty-four blooms, incurved or reflexed, and twenty-four Japanese, not less than eighteen varieties. For twenty-four incurved Mr. A. Tillery, gardener to S. E. Ridley, Esq., was a good first with Empress of India, Prince Alfred, Guernsey Nugget, Violet Tomlin, Empress of India, Violet Tomlin, Empress Eugénie, Lord Wolseley, Norman Davis, Prince Alfred, Guernsey Nugget, Empress Eugénie, Miss M. A. Haggas, Mrs. W. Shipman, Golden Empress, Venus, Princess Teck, Mabel Ward, Hero of Stoke Newington, Baron Beust, Miss Mary Morgan, Mrs. Haliburton, Charles Gibson, Barbara. Mr. Winter, gardener to Mrs. Harvey, Shanklin, was a very close second; the Princess of Wales in his stand being selected as the premier bloom. Mr. Hicks, gardener to Mr. Harrington, Cowes, was third. In the corresponding class for Japanese Mr. R. Tolley, gardener to Lady Oglander, received premier honours with J. Délaux, Criterion, Stanstead White, Mrs. C. Wheeler, Madame Baco, Baronne de Prailly, Avalanche, Gloriosum, Baronne de Prailly, Val d'Andorre, Ralph Brocklebank, Madame Paul Dutour, M. J. Pigny, Mons. Elliott, George Daniels, Madame C. Audiguier, Mrs. H. Cannell, Mrs. Beale, Belle Paule, Marguerite Marrouch, George Daniels, Japonais, Madame Baco, and Mrs. F. Jameson. Mr. Miller, gardener to Mrs. Brooke, was placed second for a very fine collection, and Mr. Winter third. There were seven collections staged, all running each other very close.

For twelve incurved or reflexed Mr. Wilkins was placed first for a stand consisting of Emily Dale, Queen of England, Yellow Perfection, Lord Alcester, Empress Eugénie, Empress of India, Lord Wolseley, Jeanne d'Arc, Miss Mary Morgan, Norman Davis, Princess Teck, and Barbara. Mr. R. Solby and Mr. Winter were placed second and third respectively, all exhibiting good collections. For twelve Japs Messrs. Hicks, Wilkins, and Winter were placed in the order of their names. The first prize stand were comprised of good examples of Etoile de Lyon, Madame Baco, Sunflower, Edwin Molyneux, Duchess of Albany, Mons. Bernet, Lady Lawrence, Mr. G. Drover, Avalanche, Mons. Bernard, George Daniels, Mr. H. Cannell. This collection furnished the premier bloom of Japanese—a well-built flower of Sunflower.

The most successful exhibitor in the amateur classes was Mr. Wheeler, who was able to secure premier honours in both classes for twelve incurved and twelve Japanese. His stand of Japanese consisted of good examples of Thunberg, Val d'Andorre, M. J. Pigny, Etoile de Lyon, Madame Baco, Avalanche, Madame C. Audiguier, Avalanche, Belle Paule, Gloriosum, Lady Lawrence, and Thunberg; and the best of his incurves were Lord Wolseley, Queen of England, Prince Alfred, Jeanne d'Arc, Lord Alcester, and Barbara; Messrs. Cooper, Sanders, and Mathews dividing the other awards. Mr. Jacobs secured first place in almost every class set apart for cottagers. His blooms were large, massive, and bright throughout; evidently he has mastered the cultivation of the flower, his premier blooms of Thunberg and Empress of India being all that could be desired.

Miscellaneous exhibits were numerous contributed, and a box of Pitmaston Duchess Pears were the admiration of all. We are unable to give further details of this interesting and excellent-managed Exhibition.

CHESHUNT.

THE Chrysanthemum Show at Cheshunt is steadily advancing in quality and importance, the one held last week being superior in all respects to those of preceding years. Mr. R. Ewing and Mr. George Paul take considerable interest in the Society, and it is mainly due to their efforts, aided by the Secretary (Mr. Archer) and the Committee, that such satisfactory progress has to be recorded. The hall devoted to the Show is not a large one, and scarcely admits of much extension of

the classes; but it is conveniently situated, and that is an important matter.

In the cut bloom classes the competition was very good, and the exhibits excellent. The principal class was that for twenty-four blooms, twelve incurved and twelve Japanese, not more than two blooms of any one variety. Mr. Cox, gardener to J. Trotter, Esq., was first, showing substantial blooms of the following incurved:—Alfred Salter (two), Lord Alcester (two), Golden Empress of India (two), Queen of England, Violet Tomlin (two), Miss Haggas, and Princess of Wales. The Japanese were also fine, comprising Etoile de Lyon (two), Avalanche (two), Japonais (two), Beauty of Castlewood (two), not distinguishable from Mrs. Wheeler; Violet Rose, Sunflower, M. Bernard, and Stanstead White. Mr. Bettesworth, gardener to R. Ewing, Esq., was a close second with bright Japanese and solid clean incurved.

With twelve incurved and twelve Japanese, Mr. Cox was also first, being followed in each class by Mr. Collins. In the premier stands the following varieties were represented:—Incurved: Alfred Salter, Miss Haggas, Princess Beatrice, Lord Alcester, Princess of Wales, Lord Wolseley, Golden Empress of India, Violet Tomlin, Princess Teck, Empress of India, Queen of England, and Hero of Stoke Newington. The Japanese were Etoile de Lyon, Stanstead White, Sunflower, Avalanche, Carew Underwood, Stanstead Surprise, W. G. Drover, Mrs. Wheeler, Mrs. Cannell, M. Bernard, Japonais, and Marguerite Marrouch. In several other classes Messrs. Cox, Walters, Turk, Gilbert, and Searles showed well, and secured prizes. Mr. Rowdon, gardener to J. Walton, Esq., had the best groups, and Mr. Bettesworth the best six dishes of Apples, excellent fruits. Messrs. G. Paul & Son, Cheshunt, contributed a group of graceful Bamboos, and Mr. Ewing had some handsome Chrysanthemum blooms not for competition, Avalanche being uncommonly fine.

THE ECCLES, PATRICROFT, PENDLETON, AND DISTRICT.

THIS Society held their fourth annual Exhibition in the Town Hall, Eccles, and it may be considered one of the best in that part of the kingdom. The principal object is to encourage the growth of the Chrysanthemum amongst the amateurs, and in this they have so far been very successful. The schedule comprised fifty classes arranged in three sections, twenty being open to all, seventeen to amateurs from any part, and the remaining thirteen are devoted to the amateurs in the district.

The Exhibition was a very representative one, and the amateurs have shown well, and in one instance even took the lead over the professional growers. The Hall presented a splendid appearance. Large Palms, Crotons, &c., lent by Mrs. Thos. Agnew, Eccles, were placed in front of the orchestra and in the hall, and other small decorative plants lent by Oliver Heywood, Esq., J.P., Stewart Garnett, Esq., J.P., and Wm. Agnew, Esq., J.P., added materially to the effect of the Show. There was a good competition in most of the classes.

Cut blooms were numerous and of an excellent quality. For twenty-four blooms, half incurved and half Japanese, Mr. Chas. Smith, gardener to D. Wilson, Esq., Claughton, Birkenhead, was first with capital blooms, and received in addition a silver medal of the National Chrysanthemum Society and their certificate of merit; Mr. J. Walker, Stockport, being second. For twelve blooms, incurved, the same exhibitor was again first, and Mr. John Cragg, gardener to A. Henry, Esq., Fallowfield, was a good second. In the following class for twelve Japanese the winners were the same as in the preceding one. For twelve blooms, half incurved and half Japanese, the first honour was again taken by Mr. Chas. Smith, gardener to P. Wilson, Esq., and Mr. J. Walker was second. The first prize in a stand of twelve mixed blooms, incurved, Japanese, reflexed, and Anemone, went to Mr. J. Walker, Mr. A. Henry being second. In the class for six Anemone centered blooms an amateur, Mr. H. Huber, was awarded the first prize, and Mr. J. Walker second. In the open amateur class for twelve blooms, half incurved and half Japanese, Mr. T. Smethurst received the first prize, together with a silver medal of the National Chrysanthemum Society, and their certificate of merit. The first prize in the collection of eighteen blooms staged, for effect was won by Mr. A. B. Wimpary, and in the other classes Mr. T. Smethurst, Mr. H. Huber, and Mr. W. Crawshaw took the lead. The classes open to amateurs residing in the district were all well competed for. For twelve blooms, six incurved and six Japanese, Mr. H. Huber received the first prize, and also the bronze Centenary medal of the National Chrysanthemum Society, and in the other classes in this section the same exhibitor was the principal prize-winner, Mr. R. Johnson also winning some first prizes in this section.

Chrysanthemums in pots were of a very good quality. Those in the open classes were all that could be desired, whilst those shown in the amateur sections were highly praiseworthy. For a group of plants, any varieties, arranged for effect, space not to exceed 9 feet by 6 feet, six groups were contributed. Mr. Towe, gardener to Mrs. H. Winterbottom, was placed first with grand examples of culture. Mr. T. Belshaw, gardener to G. H. Leigh, Esq., was second with even better plants, but through some defective arrangement of his group. For six incurved only a second prize was awarded to Messrs. T. Belshaw & Sons; and for six Japanese the same exhibitor was first; and Mr. John Barlow, gardener to T. G. Groves, Esq., second. For three Pompons G. H. Leigh, Esq., was placed first; and J. J. Thompson, Esq., second. In the open amateur section Mr. Thomas Morton and Mr. A. B. Wimpary took the lead; and in the amateur section for the district Mr. H. Huber was first in all the three classes. In the open section, for a group of

miscellaneous plants arranged for effect, space not to exceed 7 feet by 5 feet, Mrs. Thomas Agnew (Mr. Elkin, gardener) was well first with the most tastefully arranged group, Mrs. H. Winterbottom being placed second; and J. J. Thompson, Esq., third. For table plants Mrs. Thos. Agnew was again first. Mrs. H. Winterbottom took the lead for Roman Hyacinths; and J. J. Thompson, Esq., and H. H. Howarth, M.P., for Primulas. In the open amateur section Mr. H. Huber was awarded the first prize in the classes for six table plants—six foliage plants and four Primulas.

Miscellaneous exhibits were not so numerous as in former years owing to the want of space. Messrs. W. Clibran & Son, Altrincham, staged several large stands of cut blooms of Chrysanthemums. Messrs. Dickson & Robinson, Manchester, contributed a stand of very choice Cyclamens, Erica hyemalis, small Palms, Ferns, and Selaginellas.

DERBY.

THE above Society is amalgamated with the Midland Railway Horticultural Society, and held this year their sixth Exhibition of Chrysanthemums, and floral arrangements, in the spacious Drill Hall, Derby. It was a grand success in a financial point of view, for no less than 2500 visitors attended the Show on the opening day, and there was evidently no falling off on the second, for the building was packed with visitors. The Exhibition has far outdistanced former efforts, cut blooms being in many cases especially good. The most noticeable were the twelve incurved and twelve Japanese in the open class, staged by Mr. Goodacre, gardener to Lord Harrington, which secured him the coveted trophy he so well won last year, the property now becoming his own, he having won it twice consecutively. Mr. Evans, gardener Chaddeston Hall, was second, and Mr. Stopps, gardener to F. Alton, Esq., Borrowash Manor House, third, both showing substantial blooms. Mr. F. Bancroft won the challenge cup in the members' class for the second time, which consequently becomes his own, also securing the prize for the best bloom in the members' classes with a fine Etoile de Lyon. The other classes for cut blooms were well filled, the principal for six incurved and six Japanese, which was well won by Mr. Stopps, while Mr. Evans, Mr. F. Bancroft, Mr. H. Bancroft, F. W. Meakin, Mr. J. T. Smith, J. Bryan were successful in obtaining several prizes. The grouping has much improved since my last visit, the first prize falling to Mr. Smith, gardener to A. Cox, Esq., Mill Hill. Second, Mr. Dickman, gardener to Mr. E. McInnes, Osmaston Road. Third, Mr. Potter, gardener to J. Williams, Esq. Table decorations.—The prizes fell principally to Mr. Barlas, Mr. Evans, and Mr. Clark, while Mr. Adams was first with a bouquet, Mr. Potter being a good second. Specimen plants call for no comment, but hopes are entertained of these plants being better represented next year. The arrangements reflect much credit upon the Secretary, Mr. Bell, and a good working Committee.—J. P.

WALTON AND WEYBRIDGE.

THE sixteenth annual Show of this flourishing Society was held at the Public Hall, Weybridge, on the above date, and under the management of Mr. Masters, Secretary, and a hardworking Committee, a beautiful and interesting Exhibition was the result. The Hall was crowded with visitors nearly the whole afternoon and evening, and it was plainly evident that the Chrysanthemum is more popular than ever in this district.

The schedule contained thirty-six classes, nearly every one of which was well filled. The first is for six plants dwarf trained, and Mr. F. Cawte, gardener to Preston Thomas, Esq., Weybridge, gained first honours with a very bright even collection; very good indeed was a plant of John Salter. Second, Mr. Reed, gardener to E. Pettit, Esq., Oatlands Park. Three plants.—First, Mr. Millican, gardener to H. Cobbett, Esq., Walton. Second, Mr. Felgate, gardener to the Duchess of Wellington, Hersham. Three standards.—First, Mr. Millican. Second, Mr. Cawte. Third, Mr. Reed. Two pyramids.—First, Mr. Reed. Second, Mr. Millican. Third, Mr. Cawte. Pompon varieties were well shown by the same three exhibitors, Mr. Cawte being first with beautiful bright specimens.

Cut blooms were numerous and good, the Japanese varieties being especially fine. For twenty-four distinct (open class), twelve incurved and twelve Japanese, first, Mr. Carpenter, gardener to Major Collis Browne, Byfleet, with a very heavy stand, arranged thus:—Incurved: Empress of India, Violet Tomlin, Lord Alcester, Princess of Wales, Mr. Brunlees, Mrs. Heale, Golden Queen, Golden Empress, Princess Teck, Miss M. A. Haggas, Nil Desperandum, and Mrs. Shipman. Japanese: Condor, Baronne de Prailly, Mrs. F. Jameson, Avalanche, R. Brocklebank, E. Molyneux, Stanstead White, W. W. Coles, Album Fimbriatum, Etoile de Lyon, Sunflower, and Mons. Bernard. Second, Mr. Felgate; third, Mr. Sutton, gardener to J. S. Sassoon, Esq., Walton. Twenty-four incurved, first, Mr. J. Thorne, gardener to A. E. Flood, Esq., Walton, with a very clean stand of medium-sized solid flowers, arranged as follows, reading from left to right:—Lord Alcester, Queen of England, Bronze Queen, Jeanne d'Arc, Alfred Salter, Empress Eugénie, Golden Empress, Empress of India, Ada Spaulding, Mrs. S. Coleman, Beauty, Miss M. A. Haggas, Princess Teck, Cherub, Mrs. Heale, Barbara, Violet Tomlin, Mrs. Shipman, Mrs. N. Davis, Sir S. Carey, Princess of Wales, Mr. Bunn, Hero of Stoke Newington, and Eve. Second, Mr. Millican; third, Mr. Quarterman, gardener to E. Smith, Esq., Cobham. Twelve ditto, first, F. Hopkins, gardener to J. Wodderspoon, Esq., Walton; second, Mr. Felgate; third, Mr. Cawte.

Twenty-four, Japanese, first, Mr. Caryer, gardener to A. Meissner,

Esq., Weybridge, with a very bright stand; some of his best were Etoile de Lyon, Marsa, Charlie Sharman, Japonais, Mrs. F. Jameson, and Avalanche. Second, Mr. Felgate; third, Mr. Sutton. Twelve ditto, first, F. Hopkins; second, Mr. Cawte; third, Mr. Millican. Twelve Anemones, first, Mr. Millican; second, Mr. Reed. Pompons were well shown in several classes. Twelve blooms distinct, open only to gardeners who had not previously shown. First, Mr. Field, gardener to Captain Terry, Hersham; second, Mr. Packham, gardener to A. Hall, Esq., Walton; third, Mr. Pasker, gardener to F. W. Wigan, Esq., Walton. For six incurved (one variety), first, Mr. Thorne, with Lord Alcester; second, Mr. Felgate, with Golden Empress; third, Mr. Reed, with Empress of India. Six Japanese ditto, first, F. Hopkins, with Thunberg; second, Mr. Felgate, with Etoile de Lyon (these took first at Kingston); third, Mr. Sutton, with H. Cannell.

Special prizes were offered for a group of Chrysanthemums, which brought good competition. First, F. Hopkins; second, Mr. Reed; third, Mr. Cawte. Table ornaments and bouquets made a good display, and were much admired. Amateurs and cottagers also exhibited remarkably well, and it is not too much to say the Show under notice was one of the best the Society has ever held.

LINDFIELD.

THIS mid-Sussex Society held its sixth annual Show this year, and for the general quality of the exhibits compared well with many larger societies. The Assembly Room was gay with groups, plants, and blooms, whilst there was a good show of fruit, vegetables, &c., in an adjoining room. There were five large groups, and four in the amateur class. Mr. Crosley, gardener to H. M. Cumberlege, Esq., took premier place and bronze medal in the larger class, C. Wheeler being placed first in the smaller section. For eighteen Japanese Mr. J. Voss, gardener to W. Savill, Esq., was first with a stand of uniform excellence. The competition in this class was very keen, and all the blooms were of high quality; Mr. J. Hodges was second; Mr. T. Venn third. For twelve Japanese Mr. S. Horscroft, gardener to T. Potter, Esq., Ardingly, took first place with really good blooms; Mr. Voss and Mr. Venn being respectively second and third.

The first position for eighteen incurved was taken by Mr. T. Venn, gardener to W. Sturdy, Esq., who staged a very neat collection. Mr. Venn was again the winner in the class for twelve incurved, besides being awarded a certificate for the best incurved bloom in the Show (Lord Wolseley), and winning a special prize for the best bloom of Miss M. A. Haggas. Mr. Voss won a special prize for best bloom of Violet Tomlin, and also took first place for twelve reflexed and Anemone. Mr. J. Hodges, gardener to S. C. Gibbons, Esq., was awarded a certificate for the premier Jap, Mrs. J. Wright (a perfect bloom), and besides running very closely in the Japanese class was most successful in the fruit and vegetable divisions, being first for Grapes, Apples, Tomatoes, Potatoes, &c.

Mr. Townshend, gardener to E. Arbourn, Esq., was first for table plants and second for Primulas, also second for an effective group. Mr. P. Marsh, gardener to G. C. Hawes, Esq., was first for standards, besides taking second prizes for small group, specimen plants, &c. In the cottager section the display of vegetables was excellent. There was a good attendance on both days, and the Show was generally admitted to have been the best on record.

FALMOUTH.

THE fifth annual Exhibition, held under the auspices of the Royal Cornwall Polytechnic Society on the above dates, afforded ample proof that there is no decline in the activity of Chrysanthemum growers in this neighbourhood.

Plants in all classes were exceptionally good, the Judges experiencing considerable difficulty in deciding between the first and second prize groups. Although larger cut blooms have been staged at former shows, the quality of those now exhibited was especially good. Some blooms of new varieties, sent by Mr. Robert Owen, Maidenhead, were much admired. The display of fruit was very satisfactory, including a fine collection of Apples from Mr. J. Watkins, Hereford. These created much interest, the colour and size being superior to those shown by local exhibitors. Amateurs showed considerable improvement both in plants and cut blooms. For groups the first prize was awarded to Mr. W. Ruse, gardener to G. P. Bull, Esq., Marlborough, Falmouth; second, to Mr. J. Downing, gardener to Mrs. Waters, Gyllyngdune; third to Mr. B. Gill, gardener to W. H. Lean, Esq., Armin Villa. These exhibitors, together with Mr. W. Jenkin, gardener to Howard Fox, Esq., Rosehill, secured most of the prizes for specimen plants.

Cut Blooms.—Twelve incurved.—First prize to Mr. G. Pappin, Flushing, for blooms of Lord Alcester, Prince Alfred, Empress of India, Lord Wolseley, Barbara, Princess of Teck, Baron Beust, Mrs. Norman Davis, Lord Eversley, Nil Desperandum, and Pink Venus. The second prize was awarded to Mr. E. King Nicholls, gardener to C. Gray, Esq., Penryn. Twelve Japanese.—First to Mr. G. Pappin for neat blooms of Mrs. F. Thompson, Peter the Great, Fair Maid of Guernsey, Flamme de Punch, Etoile de Lyon, Avalanche, Comte de Germiny, Mdle. Lacroix, Madame C. Audiguier, Mrs. J. Wright, Sunflower, and Sarah Owen. Second prize to Mr. S. Smith, gardener to Miss Fox, Penjerriek. Six large flowered Anemone blooms.—First, Mr. G. Pappin, with Fleur de Marie, Prince of Anemones, Sunflower, Empress, Gluck, and Lady Margaret. Second prize, Miss Hockin, Little Falmouth.

A special feature of this year's Show was a class to illustrate the

climate of the West of England, prizes being offered for collections of cut flowers or foliage of any trees, shrubs, or plants grown in the open air, which brought together a magnificent collection of flowers, foliage, &c., of exotic plants, together with fine specimens of Citrons, Almonds, &c., the whole being grown and ripened in the open air in and near Falmouth. It is doubtful if such a collection of subjects growing out of doors could be shown in any other town in England.

Special attention is just now being given to fruit culture in the district, and during the Show a most valuable paper on "Renovating Orchards," by Mr. J. Wright, was read by the Hon. Secretary, Mr. J. P. Cregoe. This paper was specially written for this occasion by the kind request of Mr. Lewis Castle, Hon. Secretary of "The British Fruit Growers' Association." A large number of persons mostly interested in fruit culture were present, and the opinion freely expressed was that if the various practical suggestions in the paper are carried out great good must result to the long neglected orchards, not only in Cornwall but in other counties.

It is much to be regretted that almost constant rain interfered with the success of the Show financially.—VISITOR.

CUCKFIELD.

THIS Society held their fifth annual Show in the Talbot Hotel Assembly Rooms on Tuesday and Wednesday, the 18th and 19th inst., and was on the whole as successful as on former occasions. There was, unfortunately, a falling off in the number of groups, which has always been a good feature of this Show, only three being staged. The group shown by Mr. Geo. Stringer, gardener to R. A. Bevan, Esq., to which the premier award was given, was a fine group in every respect. One feature in it was much admired, and is worth noting by those growing for this purpose. It was a row of fine dwarf plants of the rose coloured variety La Frisure, all round, just inside a row of Fern, which made an excellent finish to the whole. Mr. J. Mitchell, gardener to Mrs. Maberly, Myttings, was second with a group in his usual neat style; and Mr. R. Fairbairn, gardener to Mrs. Lister, The Grange, Warninglid, was third with well grown plants and best quality bloom, but was, as is too often the case, deficient in finish. Specimen plants were not more numerous than on former occasions, but they were excellent quality. Messrs. Geo. Stringer, Mitchell, and Fairbairn being the successful exhibitors. Mr. Stringer was first for six Solanums with good plants. Mr. Mitchell occupied the premier position amongst seven competitors for six Primulas, Mr. R. Inglis being first for six Cyclamens.

Undoubtedly the best feature of the Show was in the two classes for twelve blooms each of Japanese and incurved, open to the county of Sussex. There were seven entries in this for the former and four for the latter. For twelve incurved Mr. T. Venn, gardener to W. Sturdy, Esq., Paxhill, Lindfield, was first with good, even, fair sized blooms. They were—Back row: Princess of Teck, Golden Empress, Lord Alcester, Miss M. A. Haggas. Middle row: Violet Tomlin, Guernsey Nugget, Lord Wolseley, Mrs. Heale. Front row: Barbara, Hero of Stoke Newington, Lady Dorothy, and Empress Eugénie. Mr. J. Voss, gardener to W. Savill, Esq., The Finches, Lindfield; Mr. S. Horscroft, gardener to T. Potter, Esq., Hapstead House, Ardingley; and Mr. R. Inglis followed in the order named.

The Japanese were of very high quality, and the winning stands were all so good that it required some knowledge of various sorts to arrive at a just decision as to their respective merits. Mr. J. Hodges, gardener to S. C. Gibbons, Esq., Great Walstead, Lindfield, was placed first with:—Back row: Etoile de Lyon, Madame Baco, Gloriosum, Volunteer. Middle row: Mrs. H. Cannell, Mons. Bernard, Pelican, Madame C. Audiguier. Front row: Mons. Barat, Boule d'Or, Jeanne Délaux, and Thunberg. Messrs. J. Voss, T. Venn, and S. Horscroft followed in succession. There was nothing in the local classes for cut blooms to call for special notice except it is the fact that Mr. J. Lingly, gardener to T. W. Best, Esq., Harvest Hill, had much the best of it, being placed first in all three classes—Japanese, incurved, and reflexed, with neat fresh blooms.

Fruit.—There were good entries in most of the fruit classes. For two dishes of dessert Pears Mr. Geo. Stringer was first with splendid samples of Pitmaston Duchess and Beurré Diel, and the same exhibitor was successful with equally fine stewing Pears—Uvedale's St. Germain and Catillac. Mr. Lingly had the best six dishes of Apples amongst eight entries; they were Waltham Seedling, Warner's King (both very fine), Alexander, Emperor Alexander, Kerry Pippin, and American Mother. Messrs. W. Manton, J. Mitchell, and Geo. Stringer were placed in the order named for a tray of vegetables, and, as usual, it was a good class.

Amongst exhibits not for competition Mr. J. Hodges showed six very fine blooms of Etoile de Lyon cut from two plants, two of them being pure white (crown buds), while the other four were bright pink (terminal buds), and illustrate the difference peculiar to this variety in producing what, to the uninitiated, would seem two distinct flowers on the same plant; splendid samples of culture, a very interesting exhibit. Messrs. J. Cheal & Sons exhibited over fifty dishes of Apples and Pears, many of them fine in size and of better colour than they are generally met with this season. Mr. Bunny of Danny Park, and Mr. Prentice of Paddockhurst, officiated as Judges, and Mr. Umpleby superintended the arrangements with his usual ability. Major Maberley shows unflinching interest as President of the Society, while Mr. J. Tugwell, sen., ably discharges the duties of Hon. Secretary.

ALVERSTOKE AND GOSPORT.

THE third Exhibition held by this Society afforded abundant proof that there is great advance in the activity of Chrysanthemum growing in the above neighbourhood, for a more satisfactory display could not possibly have been desired. The arrangements were well carried out by a small working Committee, consisting of the Hon. Secretary, Mr. J. H. Spencer; and Messrs. T. Naish, S. Collins, Babb, Miller, Burt, and Mitchell. The Thorngate Hall, a spacious, lofty, and beautifully decorated building, was filled with specimen plants, groups and cut flowers, while the fruit and vegetables were staged in the Friendly Societies' Hall adjoining. The schedule comprised fifty-three classes.

Groups were an especial feature, nine being staged for competition. In the class for a group in a space of 30 square feet, Mr. Gale, gardener to G. Cooke, Esq., Langton House, Gosport, was first with a well arranged group, comprising incurved, Japanese, and reflexed varieties of good quality. Mr. Hawkins, gardener to E. Laphorn, Esq., Fairthorne, Gosport, was second with a good arrangement, with smaller though fresh flowers. W. & J. T. Legg, Bury Road Nurseries, third; Mr. Davis, gardener to Mrs. Churcher, fourth. In the class for a group in 20 feet space, Mr. T. Smith was awarded first honours with a good arrangement, his flowers being heavy and fresh. Mr. T. Watch was second with a better arranged group, but his front plants were very weak. Mr. A. Dance, gardener to Mrs. Wharton, was third. The class for six specimen plants made a good display, filling one side of the hall. Mr. Hawkins was first with easy trained and well flowered specimens of Mdle. Lacroix, Val d'Andorre, Florence Percy, Peter the Great, Fair Maid of Guernsey, and Maiden's Blush. Mr. E. Foot was second with smaller, but fresh neat plants, Margot and Chevalier Domage being especially good. Mr. F. Limburn, gardener to Mrs. Lane, Bury Hall, third. For six specimen plants of Pompons Mr. Hawkins was again first with plants from 3 to 4 feet high and as much through, easy trained and beautifully flowered. Mr. Gale second; Mr. Foot third. Especially noteworthy were the plants showed by cottagers. For the class for four plants grown by cottagers without glass Mr. J. Webb was awarded the first prize for good plants, carrying fine flowers, one of the plants being Alfred Salter, having four very fine flowers, one of which would have secured the prize for the premier incurved bloom in the Show had the exhibitor pulled out one or two decayed florets which it contained.

Cut Blooms.—The principal class was for twenty-four blooms, half incurved and the remainder Japanese, distinct. Mr. J. Agate, Havant, was awarded first honours, with fresh, solid blooms of the following:—Incurved: Emily Dale Improved, Golden Empress, Lord Alcester, John Lambert, Miss M. A. Haggas, Violet Tomlin, Mrs. A. Coleman, Princess of Wales, Ada Spaulding, Barbara, Mrs. Heale, Lord Wolseley. Japanese: W. G. Drover, Mr. Cannell, Etoile de Lyon, Mrs. C. H. Wheeler, Mrs. H. Cannell, Geo. Maclure, Edwin Molyneux, Criterion, Ralph Brocklebank, Mrs. C. A. Carrière, Stanstead White, Anatole Cordonnier. Mr. Gale was second with good Japanese, but the incurved lacked freshness and finish. Mr. Limburn was third. In the class for eighteen Japanese Mr. Gale was first with a good stand, in which were fine blooms of G. F. Moseman, Etoile de Lyon, Japonais, and Belle Paule. Mr. Limburn was second, and Mr. Watch third. For twelve Japanese Mr. Hawkins was first with a fresh even stand; Criterion, Etoile de Lyon, Edwin Molyneux, Duchess of Albany, and Mons. Freeman were especially good. For eighteen incurved Mr. Gale was first, and Mr. Limburn second. For twelve incurved Mr. Didymus, gardener to Capt. H. G. Giles, R.N., was first, Mr. Watch second, Mr. Foot third. Mr. Limburn took leading honours in the class for twelve reflexed, Cullingfordi being grand. Mr. Hawkins second, Mr. Didymus third. Mr. Gale was first in the class for twelve Japanese Anemones, Mr. Foote second. For twelve Japanese and large Anemones Mr. Hawkins was first with fine blooms of Empress, Nelson, Souvenir de Madame Blandinieres, Dame B'anche, Margouline, Mrs. Pethers, and Geo. Hawkins, a fine yellow sport from Geo. Sands. Pompons were a strong class, seven staging. Mr. Hawkins was well ahead with fine bunches, "three flowers to a bunch," of Rubrum Perfectum, Comte de Morny, Sunset, Prince of Orange, Black Douglas, and Mdle. Marthe.

Among the cottagers' exhibits were some fine boxes of flowers from Mr. H. Lee and Gunner Holmes, R.A., the former taking the lead for six incurved, six reflexed, six Anemones, and six Pompons, all being good fresh solid blooms. From his stand of incurves was selected the premier bloom of the Show, Gunner Holmes taking first for six Japanese, Edwin Molyneux being grand, the finest yet seen in this part of the country, and was deservedly awarded the prize for the premier bloom in the Show.

The special prizes were numerous; the most interesting was a class for the best representative collection of cut blooms of Chrysanthemums of all sections. The first prize, which was given by the President (the Hon. and Rev. Canon Brodrick) was won by Mr. Hawkins with a finely arranged collection. His Japanese, incurved, reflexed, Anemones, singles, Pompons, and Anemone Pompons were especially good. The second prize, given by E. Laphorn, Esq., was won by Mr. Gale; third prize, given by A. S. Blake, Esq., being taken by Mr. Foot. A cup, offered by Miss E. Legg of the North Cross Street Seed Stores, for the best six varieties of vegetables was taken by Mr. Hawkins; the same exhibitor taking the prize offered by Mr. W. Colchester with a plant of Fair Maid of Guernsey, about 7 feet high and 4 feet through, carrying hundreds of pure white flowers. Vegetables were well shown, Mr. Hawkins securing the first place for nine distinct varieties with good leading kinds; W. & J. F. Legg second; Mr. Davis third; Mr. Limburn fourth. Apples and Pears were well shown, Mr. Gale, Mr. Hawkins,

and Messrs. Legg winning for Apples respectively; Mr. Limburn, Mr. Hawkins, and Mr. Foot taking the prizes for Pears in the order of their names. Mr. Hawkins was first for black Grapes, Mr. J. Groom being first for white, the last-named exhibitor showing some fine Solanums and Primulas. Bouquets were well shown, there being six staged, Mr. Hawkins winning easily with a handsome light arrangement; Mr. Gale second, Mr. Davis third, Mr. Foot fourth.

CHELMSFORD AND ESSEX.

A VERY successful Show was held in the Corn Exchange, a spacious, lofty light building with glass roof well adapted for the occasion. The groups, always good here (the cutting back system being very successfully practised in the neighbourhood), were exceptionally so on this occasion, and formed the chief centre of attraction, the silver medal of the N.C.S. being added to the money prize. Mr. S. Pragnell, gardener to H. C. Wells, Esq., C.C., Broomfield Lodge, Chelmsford, was first, closely followed by Messrs. Saltmarsh & Sons of The Nurseries, Chelmsford; third, Mr. Brazier, gardener to W. Gray, Esq., Chelmsford; fourth, Mr. J. Burrell, gardener to W. W. Duffield, Esq., Brownings, Chelmsford. The two leading groups in this class were said to have rivalled those of the N.C.S., having more massive deeper blooms from back to front. In a class for small groups an amateur, Mr. G. J. Bollingbroke was first; Mr. W. Harris, gardener to Philip Marriage, Esq., Broomfield Mills, second; Mr. H. Bishop, Langly's Park, Waltham, third; and fourth Mr. C. J. Simpson, St. John's Nursery, Chelmsford. Cut blooms were good, especially the Japanese. For twenty-four incurved Messrs. Saltmarsh & Sons were first, Mr. Pragnell second. The sharpest contest in the Show was for twenty-four Japanese, Messrs. Saltmarsh and Sons winning by a few points; Mr. Pragnell second; and Mr. W. Dance, gardener to Mrs. Lowe, Gosfield Hall, third. In a class for twelve incurved Mr. Dance was first, Mr. T. Brazier second, Mr. C. J. Simpson third. Twelve Japanese.—First, Mr. C. J. Simpson; second, Mr. T. Brazier; third, Mr. W. Harris. In the six classes Mr. Bollingbroke, Mr. Seward, Mr. W. Harris, Mr. E. Spurge, Mr. Witham, and Mr. Stevens, gardener to E. Jex, Esq., Springfield, were the winners. In the reflexed class Mr. Pragnell was first, Messrs. Saltmarsh & Sons second, Mr. W. Dance third. For large Anemones Messrs. Saltmarsh & Sons first, Mr. Pragnell second, Mr. Brazier third. For twelve varieties Pompons, three spikes of each, Mr. Pragnell was first, Mr. Brazier second, Messrs. Saltmarsh & Sons third. Messrs. Saltmarsh & Sons had the best incurved bloom in the Show with a fine bloom of Princess of Wales, whilst Mr. Pragnell took similar honours in the Japanese with a fine deep bloom of Avalanche, which the latter was awarded a certificate of the N.C.S.

The plant classes were well filled, and were very good indeed. For four incurved Mr. Dance was first; Mr. Brazier, second; Mr. Burrell, third. Four Japanese, first, Mr. Burrell; second, Mr. Dance; third, T. Brazier. Four Pompons, which were extremely well done, Mr. Dance was first; Mr. Burrell, second; Mr. Brazier, third. For single specimen, incurved, first, Mr. Burrell; second, Mr. W. Harris, with a novelty in a plant of Mrs. Dixon, trained heart shape; third, Mr. Brazier. Single specimen, Japanese, first, Mr. Brazier; second, Mr. Dance; third, Mr. Burrell. For single Pompons, Mr. Dance was first; Mr. Burrell, second; Mr. Brazier, third.

In a class for six table plants, Mr. Pragnell was first; Messrs. Saltmarsh & Sons, second; Mr. Stevens, third. There was a good competition in the vegetable classes, Mr. Pragnell taking first with a fine collection; Mr. Henry Bishop, Langly's Park, second; Mr. J. Burrell, third.

In the special prize classes, one for twelve Chrysanthemum blooms, four Japanese, four incurved, four Anemones, was well contested, Mr. Pragnell being first; Mr. Brazier, second; Mr. C. J. Simpson, third. The fruit classes were not quite so well represented as usual. Mr. Green, Harold Court, Brentwood, exhibited some fine Gros Colman Grapes; Messrs. E. Searle and Mr. Pragnell some excellent Alicante, taking prizes in the order named. Messrs. Saltmarsh & Sons exhibited a fine collection of Apples and Pears not for competition, whilst the Essex Bee Association offered several prizes for honey, which were well contested.

Messrs. Saltmarsh & Sons had the best stand of bloom in the Show with their twenty-four Japanese, and were awarded the bronze medal of the N.C.S. Mr. Dance won the Centenary bronze medal with his four incurved trained plants. Mr. Burrell was awarded a bronze medal of N.C.S. for his four Japanese plants, and Mr. Brazier a certificate of N.C.S. for his single specimen Japanese plant.

TUNBRIDGE WELLS.

THE fourteenth Exhibition of Chrysanthemums and fruit was held in the Royal Sussex Assembly Rooms, and must be recorded as one of the finest ever held under the auspices of this Society. There was a great falling off in the plant classes, but this was more than made up by the quantity and quality of the cut blooms staged. Two silver cups were again offered for competition in the plant classes, and it is to be regretted the competition for them was very weak. Let us hope the Committee will see the folly in offering two of the most valuable prizes for plants and ignoring the most attractive feature—the cut blooms. The first cup offered for a group of plants, Japanese, Pompons, or Anemone, effect to be the leading feature, brought one exhibitor in Mr. J. Snoker, gardener to Mrs. Hall, Brathay House, Broadwater Down, who was awarded the cup for a splendid group of well-grown plants. The second cup for a group shown in a space of 12 feet by 6 feet brought three exhibitors. Mr. Hemsley, gardener to S. R. Brewer-

ton, Esq., 42, Broadwater Down, was deservedly awarded the prize for a well arranged group, the quality of flowers being also good. Mr. Scammell, gardener to C. Reily, Esq., The Priory, Nevill Park, having to be content with second honours this year with a very creditable group. Mr. E. Luff, gardener to G. Holt-Mason, Esq., Castleton, Tunbridge Wells, third.

The centre of attraction was confined to the cut blooms, and it is surprising that such fine examples were forthcoming in this direction, the prizes being totally insignificant compared with the plant classes. In the class for twenty-four incurved two only competed. Mr. W. Wallis, a new exhibitor, gardener to J. Mews, Esq., Hartwell, Hatfield, was awarded first honours with a fine even stand, but several blooms had very faulty centres. The varieties were—In the back row: Alfred Lyre, Empress of India, Princess of Wales, Miss Haggas (good), Violet Tomlin, Mrs. Heale, Lord Wolseley, Golden Queen of England. Middle row: Mrs. W. Shipman, Isabella Bott, Jardin des Plantes, Lady Hardinge, Queen of England, Barbara, Golden Empress, Sir Stafford Cary. Front row: White Venus, Prince of Wales, Lady Dorothy, Duchess of Manchester, Eve, Cherub, Lord Eversley, Mr. Brunlees. Mr. J. Snow, gardener to C. and A. Murietta, Esqs., Wadhurst Park, was placed second with a good even stand of solid blooms, especially fine Mrs. Heale and Miss Haggas.

The class for twenty-four Japanese brought several fine collections. Mr. Wallis was again successful with heavy bright blooms of the following—Back row: Mrs. J. Wright, Sunflower, Stanstead Surprise, Etoile de Lyon, Gloriosum, Madame Baco, Duchess of Albany. Middle row: Madame C. Audiguier, M. J. M. Pigny, Le Sceptre Toulousain, Marsa, Avalanche, Sarah Owen, Mons. Bernard, George Daniels. Front row: Mrs. F. Jameson, Pink Mdle. Lacroix, Florence Percy, Ralph Brocklebank, J. Delaux, Mrs. A. Hardy, grand; Madame J. Laing, and Soleil Levant. Mr. C. Davis, The Gardens, Hall Place, Leigh, was placed second. The front row in this stand was very weak indeed. Mr. Snow, gardener Wadhurst Park, was placed third with a stand not many points behind the prize collection. For twelve incurved Mr. J. Legg, gardener to Rev. E. Boardman, Groombridge, came to the fore with even, clean, and solid blooms. Mr. Snow a good second. Mr. Avis, gardener to Hon. P. Petre, Faircrouch, Wadhurst, third. For six incurved Mr. Legg was again first, Mr. Wallis second, and Mr. Snow third. In the class for six Japanese the competition was also keen. Mr. Snow was placed first; Mr. Scammell, gardener to C. Reily, Esq., second; Mr. W. Avis third.

The show of fruit was remarkably fine, Mr. Bridger, gardener to Lord de Lisle, Penshurst, was the principal exhibitor. Mr. Johnstone, gardener to Captain Green, Bayham Abbey, exhibited in grand style, Mr. Bridger having to take second to him in several classes. The Secretary and Committee are to be congratulated upon the advance made.

REIGATE.

THE second Exhibition of this Society was held in the Public Hall, Reigate, which was filled to an uncomfortable degree, despite the fact that another room was devoted to overflow exhibits. Of course, when it is remembered that Reigate is a good district the crowded state of the Show was not surprising. In the cut flower classes competition was most keen. In the leading class for thirty-six Japanese Mr. C. J. Salter, gardener, Woodhatch Lodge, was first with fine examples of Sunflower, Marsa, L'Adorable, Japonais, Sarah Owen, and Madame Baco; the remainder (all good) were E. Molyneux, Ada Spaulding, Fimbriatum, Mr. H. Cannell, Yokohama Beauty, Mons. Astorg, John Thorp (a weak flower), Grandiflorum, Belle Paule, Blanche Neige, Mons. Bernard, Maiden's Blush, Madame C. Audiguier, Mrs. J. M. J. Pigny, Mrs. Wheeler, Charles Wagstaff, Moonlight, Madame John Laing, Avalanche, Jeanne Delaux, Charlie Sharman, Gloriosum, Amy Furze, Lady Lawrence, Dr. John Tanner, Stanstead White, Mdle. Lacroix, Etoile de Lyon, Volunteer, and Boule d'Or. Mr. J. Brown, the Hon. Sec., Great Doods, Reigate, was second with similar but rather rougher and smaller blooms.

For twenty-four Japs Mr. C. J. Goldsmith, gardener, High Trees, Redhill, was first with fine flowers of Mrs. J. Wright, Album Fimbriatum, Carew Underwood, Belle Paule, Duchess of Albany, Etoile de Lyon, Album, Elaine, and Edwin Molyneux. Mr. H. Bailey, The Briars, Reigate, was a close second. For twelve Japs Mr. W. Slowgrove, Gatton Lodge, Reigate, was awarded the first place; he had fine examples of Thunberg, Jeanne Delaux, Marsa, Boule d'Or, Meg Merrilies, Madame J. Laing, Val d'Andorre, Gloriosum, Avalanche, Edwin Molyneux, Comte de Germiny, and Stanstead White. Second Mr. J. R. Cotton, gardener to E. Bell, Esq., Wray Park, Reigate. Third Mr. J. Port, Sheybrook, Reigate. Mr. Port took first for six Japs; Mr. Peters, Danecroft Lodge, second. For six Japanese, one variety, Mr. Hayter, gardener to the Marchioness of Anglesey, The Priory, Reigate, was first with Sunflower; second Mr. Brown with Avalanche; third Mr. Cotton with Mdle. Lacroix. Six incurved, one variety, first Mr. Salter with Empress of India; second Mr. Hayter with Lord Alcester, also second for twelve incurved distinct, Mr. C. Goldsmith being first. For twenty-four incurved, distinct (twelve reflexed in eight varieties, and twelve Pompons three blooms each) Mr. Salter was first in each case with superb flowers.

In a large class for six varieties, any kind, Mr. Slowgrove was placed first; he had Etoile de Lyon, Boule d'Or, Maiden's Blush, Gloriosum, Val d'Andorre and Golden Dragon. Mr. Tickner, gardener to J. Watney, Esq., Shermanbury, Reigate, was a good second. Third, Mr. Cotton, who, however, was first for six blooms of incurved. Second, Mr. Peters and third Mr. S. J. Crofts, gardener, The Wilderness, Reigate. Plant.

department.—For six of any kind Mr. Tickner was first with six *Dracenas*. Six *Cyclamens*.—First, Mr. Hayter. Mr. Tickner had the best six table plants. Second, Mr. Brown, with six *Celosias*. Third, Mr. Hayter. Six *Chrysanthemums* in 32's.—First, Mr. W. Hamilton, Beechwood Gardens, Reigate. Second, Mr. Brown. Third, Mr. Hayter. Six *Primulas* from seeds supplied by J. Peed & Sons.—Mr. Cotton was awarded first prize. For a group of miscellaneous plants arranged for effect, 50 feet super.—First, R. V. Smith, gardener, Margery Hall, Reigate. Second, Mr. Hayter. Third, Mr. Hamilton. These groups were all much too crowded. In the corresponding class for 30 feet Mrs. Tickner had a light and effective group. For two specimen *Chrysanthemums*, and four ditto, trained, Mr. J. Reeves, gardener, Lochinvar, Reigate, secured first honours with large specimens.

The class for a group of *Chrysanthemums*, 50 feet super, was well filled, there being five entries forward. The first prize was awarded to Mr. C. J. Goldsmith, who had a charming group, dwarf and neatly arranged. Mr. Brown was second, but his group was not so even, moreover, it lacked finish. Mr. H. Bailey, The Briars, was a good third. In a similar class for groups of 30 feet.—First, Mr. Peters. Second, Mr. Tickner. Third, Mr. Port. Commended, Mr. Parfit, South Park. Mr. Walls, Earlswood Nurseries, Red Hill, had a bright and varied group of cut flowers, arranged in somewhat novel fashion, a kind of panelled carpet; it seemed to be admired and attracted a good deal of attention. Messrs. Cheal & Sons, Lowfield Nurseries, Crawley, had forward a representative collection of Apples and Pears; they had grand samples of Warner's King, Prince Albert, Lord Derby, Golden Noble, Beauty of Kent, Wellington, and Sandringham—Uvedale's St. Germain and Beurré Clairgeau Pears. This firm also exhibited their patent flower supports filled with *Chrysanthemums*, for which purpose they seemed admirably suited.

CHELTENHAM.

A FINE Exhibition was held in the Winter Gardens on the 12th and 13th inst., the competition being very keen in almost every class. The Winter Gardens are admirably adapted for holding a large show, and probably a finer display was never held in the Gardens than on the above occasions. The prizes given for six plants did not bring out anything of special merit either in the Japanese or incurved classes, and the same remarks are applicable to the four plant classes; Mr. E. Pates, G. Holloway, Esq., M.P., Mr. J. Pilgrim, and Mrs. Lingwood taking the chief honours. The groups were very effective, plants and blooms proving high cultural skill. In the open class Mr. C. Roberts, Gloucester, was first, and Mr. J. Pilgrim, Cheltenham, was a good second; amongst amateurs Colonel Rogers was awarded first place; T. W. Butt, Esq., second.

For forty-eight cut blooms, distinct, twenty-four incurved and twenty-four Japanese, prizes of £10, £5, £3, £2, were given, for which there was keen competition. W. M. Baker, Esq. (gardener, Mr. J. Aplin), was a splendid first, with blooms that would be very difficult to equal. The varieties were—Back row: Stanstead Surprise, Boule d'Or, E. Molyneux, Etoile de Lyon, Val d'Andorre, Comtesse de Beauregard, Meg Merrilies, Yellow Dragon. Middle row: Comte de Germiny, Madame Baco, R. Brocklebank, Japonais, Sunflower, Avalanche, Carew Underwood, M. Brunt. Front row: Belle Paulc, Mrs. Alpheus Hardy, fine; C. Charman, Mr. H. Cannell, Mons. J. Laing, Sarah Owen, Mons. Freeman, Mrs. F. Jameson. Incurved, back row: Lord Wolseley, Lord Alcester, John Salter, Empress of India, Queen of England, Miss M. A. Haggas, Prince Alfred, Princess of Wales. Middle row: Jeanne d'Arc, Violet Tomlin, Mrs. Heale, C. Gibson, Golden Empress, Barbara, Princess of Teck, sport from Lord Alcester (finest incurved in the Show). Front row: Mabel Ward, Mrs. Nash, Cherub, Lady Slade, Empress Eugénie, Refulgence, Angelina, and Eve. T. P. W. Butt, Esq., was second; J. R. Greatorex, Esq., third; Mr. C. Roberts, fourth. For eighteen incurved blooms, T. P. W. Butt, Esq., was first; having Guernsey Nugget, Queen of England, Prince Alfred, Jeanne d'Arc, Lord Alcester, Mrs. Heale, Princess Beatrice, Lord Wolseley, Miss Haggas, Lady Hardinge, Violet Tomlin, Lady Dorothy, &c. Canon Coventry, second; Lord Sudeley, third. For eighteen Japanese blooms, T. P. W. Butt, Esq., was again first, with fine well built flowers. Lieut.-Colonel Rogers, second; Canon Coventry, third. For twelve incurved, Lieut.-Colonel Rogers was first; G. Holloway, Esq., second; Captain Tickell, third. For buttonholes and sprays, E. Smith & Son were awarded principal places.

For unlimited collection of culinary Apples, A. J. Skinner, Esq., was first; Mr. H. Moorman second; Mr. A. Cook third. For dessert, unlimited number of dishes, Mr. H. Moorman was first, A. J. Skinner, Esq., second; C. Lee-Campbell, Esq., third. For three varieties of black Grapes C. Lee-Campbell, Esq., was first with fine Gros Colman, Lady Downe's, and Alicante; and the same exhibitor was also first for three bunches of any black with Gros Colman, remarkable for large size of bunch and berry and perfect finish. A. J. Skinner, Esq., was second with Alicante; Lord Sudeley third with Gros Colman. For three bunches of white Mrs. Southwood was first with Bowood Muscat; C. Lee-Campbell, Esq., second, with Muscat of Alexandria. For nine dishes of vegetables, twelve specimens of each, A. J. Skinner, Esq., was first, Mr. A. Cook, second, both putting up in high-class style. *Primulas*, *Solanums*, *Epiphyllums*, and *Eupatoriums* were well shown, and contributed much to the attractiveness of the Show. Great credit is due to the energetic Secretary, Mr. G. Tovey, Westbourne Villa, for working up the Exhibition to its present position.

Mr. J. Aplin, gardener to W. Meath Baker, Esq., Hasfield Court, Gloucester, has fixed a grand sport from Lord Alcester, which will

prove, when known more, to be in great request. It is quite distinct, in colour approaching a beautiful mauve, perfect in shape, and very large; in fact, it was unquestionably the finest incurved in the Cheltenham Show. Mr. Aplin said he propagated a dozen plants from the sport last winter, and they have all come true. It is superior to its parent in width of floret, size of bloom, and of uncommon colour, which should make its future secure.

MONMOUTH.

THE Monmouth *Chrysanthemum* Society celebrated their annual Show recently, and although a young society, and established mainly through the exertions of the worthy Secretary, Mr. G. Tucker, an enthusiast in matters horticultural, especially in connection with the *Chrysanthemum*, it is now firmly established, and in much favour with the local public, and well deserves to rank as one of the best provincial exhibitions. Several groups of *Chrysanthemums* were in competition in the three classes devoted to them, some of a very high order of merit. The cut blooms were also good, but the staging was rather too high to show them off to advantage.

Groups.—In class 1, for a group in which quality and general effect were to be the leading features, and a silver cup, value £5 5s., offered as the first prize, three competitors entered, Mr. Bannerman, the President of the Society, coming first with a group of first-class quality, both Japanese and incurved being well represented, although this exhibit was rather roughly finished in front. Mr. Tucker was a good second, his flowers being generally rather smaller, but not showing large pots in the front. Third, Mr. Hughes. In class 2, for a group covering 36 square feet, the competition was stronger, six competing. Mrs. Parker was first, Col. Boothby second, Col. Gould third. Specimen plants were not very good. In the class for four, Mr. Bannerman was first, Mr. John Cloud second.

Cut Blooms.—The schedule of this Society specifies that all flowers shall be shown as grown; any exhibitor staging blooms artificially dressed shall be disqualified. The leading exhibits were very good, and if not really "dressed" had no doubt received some assistance while the blooms were in course of development. For twenty-four incurved, not less than eighteen varieties, Mr. Aplin, Hasfield Court, Gloucester, was a good first with Queen of England, Miss Haggas (two), Princess of Wales (two), Empress of India (two), Princess Teck, Violet Tomlin, Golden Empress, Lord Wolseley, Eve, Antonelli, Jeanne d'Arc, Lord Alcester, Refulgence, Mrs. Dixon, Barbara, Mrs. Nash, Baron Beust, G. Glenny, Cherub, and Lady Hardinge. Second Mr. E. C. Currie.

For a similar number of Japanese the competition was very keen, nine lots being in competition. Mr. Bannerman was first, just beating Mr. Aplin by two points; his flowers were Avalanche (two), Mr. Cannell (two), Madame Audiguier (two), M. J. Pigny (two), Frédéric Marrouch, Carew Underwood, Ralph Brocklebank (two), M. H. Elliott, Sarah Owen, Stanstead White, Sunflower (two), Mrs. J. Wright, J. Délaux, Hiver Fleuri, Gloriosum, Madame Baco, Peter the Great, and W. Robinson. Mr. Aplin had more colour in his stand, which also included a good bloom of Mrs. A. Hardy. Third Mr. Brook. For twelve incurved Mr. Tucker was first, Mr. F. C. Williams second; and for the same number of Japanese first Mr. Tonsett, second Mr. H. Kemeys-Tynte. Numerous classes were provided for miscellaneous plants, table plants, fruit, and vegetables, the competition for the leading position in most instances being keenly contested. In the fruit classes Apples made a good display.

Not for Competition.—Mr. Coomber, Hendre, Monmouth, contributed a handsome group of plants, among which *Calanthes* figured conspicuously; he also staged some of the best Japanese and incurved blooms in the Show, the latter being noticeable for their breadth and depth of flower, and in competition with others would have been an easy first in either of the classes. We may suggest that it would add more interest, especially to strangers, if the exhibitor's address and gardener's name were added to the prize cards.

BIRKENHEAD AND WIRRAL.

LAST Thursday the above Society held their fourth Exhibition of *Chrysanthemums* and fruit in the Birkenhead Town Hall, and judging from the exhibitors and the quality of cut blooms and hardy fruit (which could not be excelled in any part of the kingdom), the Birkenhead Show is likely to become a dangerous rival to the Liverpool Show, and although only starting with a small balance in the bank owing to the very wet weather experienced last year, it is most gratifying to state that the Society had this time a crowded attendance, and if only more classes are thrown open they need not fear for its ultimate success. At the dinner Mr. Jamieson, speaking as one of the Judges of fruit, said it had been a most difficult task owing to the excellent quality throughout, and Mr. Kipps, on behalf of the *Chrysanthemum*, said he believed if anything the incurved blooms were a little better than those he saw at Birmingham the previous day, while the Japanese were about equal. With such an excellent Secretary and Committee the Society is sure to increase in every respect, as it deserves to do.

For twenty-four incurved blooms (open) there was a close battle, Mr. G. Burden, gardener to G. Cockburn, Esq., Lingdale Lodge, Oxtot, securing first honours with the following. Back row: Queen of England (two), Lord Alcester (two), Alfred Salter, Empress of India, Golden Empress, Princess of Wales. Second row: John Salter (two), Princess of Wales, Violet Tomlin, Empress of India, Mrs. Heale, Emily Dale Improved, Miss M. A. Haggas. Front row: Miss M. A. Haggas, Refulgence, Prince Alfred, Lady Hardinge, Mrs. Coleman, very fine

Princess Beatrice, Jardin des Plantes, and Jeanne d'Arc. Second, Mr. J. Jellicoe, gardener to F. H. Gossage, Esq., Camp Hill, Woolton. Third, Mr. William Littlemore. For the same number of Japanese Mr. G. Burden was again first, his varieties being—Back row: Etoile de Lyon, Japonais, Avalanche, E. Molyneux, La Triomphante, Boule d'Or, Mrs. Laing, Stanstead White. Second row: T. Stephenson, Mons. Bernard, Hamlet, Val d'Andorre, Mrs. F. Jamieson, M. J. M. Pigny, Jeanne Delaux, Criterion. Front row: Marsa, excellent; Sarah Owen, Marguerite Marrouch, Puritan, Sunflower, Val d'Andorre, Madame Louise Leroy, and C. Wheeler. A close second, Mr. J. Jellicoe; third, Mr. J. Watson, gardener to T. S. Hannay, Esq. For twelve incurved blooms (open), Mr. T. Leadbetter, gardener to T. B. Hall, Esq., was first; Mr. C. Osborne, gardener to H. J. Robinson, Esq., Aymestry Court, Woolton, second; and Mr. J. Watson third. In the corresponding number of Japanese, Mr. C. Osborne was first with splendid blooms; second, Mr. W. Broadey, gardener to W. H. Jones, Esq., Hooton, who had capital blooms; third, Mr. T. Leadbetter.

In the local classes for eighteen incurved Mr. T. Ranson, gardener to H. R. Rodger, Esq., was a good first. Second, Mr. G. Burden. Third, Mr. W. Broadey. For eighteen Japanese Mr. G. Burden was placed first, Mr. T. Ranson second, and Mr. J. Watson third. For twelve incurved, first, Mr. J. Watson. Second, Mr. C. Smith, gardener to D. Wilson, Esq., Claughton. Third, Mr. W. H. Jones. Twelve Japanese, first, Mr. T. Leadbetter. Second, Mr. C. Smith. Third, Mr. G. Lyon, gardener to J. H. Kenion, Esq., Rock Ferry. Six incurved, first, Mr. J. Hay, gardener to J. D. Irvén, Esq. Second, Mr. T. Smith, gardener to T. L. Telling, Esq., Oxtou. Third, Mr. S. Bell, gardener to R. L. Greenshields, Esq. In the class for six incurved and six Japanese for those who have never won a prize there was a keen competition, Mr. J. Watson being first. Second, Mr. J. Taylor, gardener to R. Reed, Esq.

In the fruit classes the competition was very strong. Grapes were of very fair quality, whilst Apples and Pears were really superb. For a collection of six dishes (Pines excluded) Mr. M. Quirk, gardener to W. Porter, Esq., Thingwall Hall, Cheshire, was placed first with a good bunch of Alicante and Muscat of Alexandria of good colour, Thompson's and Beurré Boussoch Pears, Orange Pearmain and Col. Vaughan Apples. Second, Mr. W. Hannagan, gardener to R. C. Naylor, Esq., Hooton Hall. Equal third, Mr. J. Barker, gardener to J. W. Raynes, Esq., Rock Ferry, and Mr. R. Brownhill, gardener to G. Fowler, Esq. For two bunches Black Alicante Mr. J. Barker was an excellent first; Mr. T. Ferguson, gardener to Mrs. Patterson, Rock Ferry, second; Mr. T. Grindley, gardener to E. Billington, Esq., third. For two bunches of black Grapes, any other variety, Mr. T. Ferguson first with well coloured bunches of Barbarossa; second, Mr. R. Brownhill, with Gros Colman; third, Mr. T. Eaton, gardener to J. Parrington, Esq., Roby Mount, Roby, with Lady Downe's. For two bunches white Grapes, any variety, Mr. M. Quirk was well first; R. Hobson, Esq., Bromborough, second; Mr. T. Winkworth, gardener to R. Brocklebank, Esq., Childwall, and Mr. J. Barker, equal third. The class for four dishes of Pears, first to Mr. W. Hannagan, with grand examples of Pitmaston Duchess, Doyenné du Comice, Beurré Diel, and Glou Morceau; second, Mr. C. Worker, gardener to Mrs. Blomfield, who had enormous Pitmastons; third, Mr. C. Taylor, gardener to Rev. Canon Robin, Woodchurch. For one dish ripe fruit, first, Mr. C. Worker, with Doyenné du Comice; second Mr. Hannagan, with same variety; third, Mr. A. Brown, gardener to G. Webster, Esq., Upton. For six dishes culinary Apples Mr. W. Hannagan was first with splendid fruit of Peasgood's Nonesuch, Warner's King, Mère de Ménage, Gloria Mundi, Alfriston, and Emperor Alexander; second, Mr. A. Williams, Bodenham, Leominster; third, Mr. J. Davis, Bunhill, Bodenham, Leominster. One dish of culinary Apples brought out thirteen or fourteen exhibitors. First, Mr. T. Williams, with Warner's King; second, Mr. C. Worker; third, Mr. J. Davis, with same variety. For six dishes dessert Apples, Mr. J. Davis was first with beautiful coloured fruit of the following:—Blenheim Pippin, Summer Queen, Ribston Pippin, Princess Pippin, Cox's, and Court Pendu Plat; second, Mr. Hannagan; third, Mr. J. Hyde, Bodenham. For one dish, Mr. C. Worker first with Ribston; second, Mr. A. Brown, with same variety; third, Mr. J. Bounds, gardener to A. L. Jones, Esq., with King of Pippins. Four dishes brought a good number of competitors. First, Mr. A. Brown, with Cox's Orange, Blenheim, Ribston and King of the Pippins; second, Mr. C. Worker; third, Mr. T. Grindley. For six Cyclamens, first, Mr. J. Watson; second, Mr. S. E. Haines, gardener to McGregor Laird, Esq.; third, Mr. A. Price, gardener to F. Jevons, Esq., Claughton. Mr. Austin Houghton, the Secretary, is to be congratulated on the excellent show. In the evening a concert was given, and the hall was crowded.

PEMBROKE.

THOUGH so far removed from Chrysanthemum centres geographically, Pembroke can boast of a Show that, in the matter of quality of exhibits, rivals many of our best provincial fixtures. Both cut blooms and plants were highly meritorious, and for the district, the entries, too, were numerous. A very noticeable and commendable feature of the Society is the provision made for cottagers and small amateurs, and the response amply justifies the provision. Nowhere has it been my lot to see such splendid exhibits staged by *bonâ-fide* artisans as at this Show. The specimen plants and groups put up by these worthy sons of toil would have held their own very creditably if staged in the open classes in competition with some famous growers. This is a very healthy sign; may other societies follow this noble example! Additional interest was attached to the present Show, the N.C.S. having been induced to offer

Centenary silver and bronze medals and certificates for specimen blooms and plants.

For three plants, incurved or reflexed: First, Mr. French, gardener to Col. Suarín, Ovierton, with White and Peach Christine and Cloth of Gold. Three Japanese: First, Mr. French; second, Mr. Weaver, gardener to Col. Lambton, Brownslade, the former with Avalanche and Bertie Rendatler, very fine, but closely followed by Mr. Weaver. Group, 8 feet by 5 feet: Mr. French was again a splendid first, his Molyneux and Avalanche being grand, and the plants throughout even and beautifully foliaged. Mr. Weaver came second with a group that at an ordinary show would have had an excellent chance, his plants being only less excellent than the former. Single specimen, incurved or reflexed: Mr. Dumble, gardener to Sir Chas. Philips, Bart., Picton Castle, was first with George Glenny; Mr. French second, and Mr. T. F. Stephens third. For single specimen Japanese, Mr. French, with a grand plant of Avalanche, was first, his plant carrying about forty blooms of good size, the same plant gaining him the N.C.S. Centenary silver medal. Mr. J. T. Stephens (an amateur) took second with a capital dwarf plant of Val d'Andorre, and Mr. Dumble third with Avalanche. Single specimen Pompon: Mr. French first.

Twenty-four cut blooms: Mr. Dumble was placed first with exceedingly fine blooms, his best being Golden Empress, Empress of India, Mrs. Heale, Miss Haggas, Princess Teck, and Queen of England (incurved), and Condor, Etoile de Lyon, Madame C. Audiguier, Fair Maid of Guernsey, Sunflower, Florence Percy, Boule d'Or, Belle Paule, Val d'Andorre, and Avalanche (Japanese); Mr. French running in a very good second, his incurved smaller and less even. The best incurved in this lot were Golden Empress, White Venus, and Prince Alfred; and best Japanese, Florence Percy, Meg Merrilies, E. Molyneux, Condor, Etoile de Lyon, Comte de Germiny, and Avalanche. Third, Mr. W. Treseder, nurseryman, Cardiff. Twelve cut blooms, incurved: Mr. Dumble took honours with Princess Teck, Lord Alcester, Miss Haggas, &c., and twelve Japanese he stood first again with Condor, Jeanne Delaux, Sunflower, Belle Paule, &c. Mr. Treseder second with M. Lacroix, Madame Paule Dutour, Comtesse de Beauregarde, &c. Mr. French third, and Mr. Weaver extra third. Six large flowering Anemones: Mr. French first, Mr. Dumble second, and Mr. D. Owen third. The Society's silver medal for group was won by Mr. French with the group already mentioned. The N.C.S. silver Centenary medal for the best specimen plant, also won by Mr. French, with the Avalanche mentioned above, and the certificate of the N.C.S. for best bloom was won by Mr. Dumble for a splendid bloom of Avalanche in his first prize stands. In the corresponding classes for amateurs the principal exhibitors and prizetakers were Mr. G. T. Stephens, Mr. F. J. Skyrme, Mr. F. J. Gay, Mr. T. Croft, Mr. R. Williams, Mr. D. Owen, and Mrs. Rowe, Mr. T. Croft winning the Society's silver medal for group with a highly meritorious exhibit, Mr. J. T. Stephens gaining the N.C.S. silver medal for specimen plant with a good William Robinson, and the N.C.S. certificate for best bloom with an excellent Edwin Molyneux.

The cottagers' plants and blooms were exceedingly fine. Mr. J. Wogan in this section winning N.C.S. Centenary bronze medal for single specimen with Peter the Great, and Mr. B. Bryant winning a bronze medal given by Mr. Rowe for single specimen with Golden George Glenny. (Open to cottagers that had not won prizes at previous shows). Messrs. Thomson & Sons' prize to the exhibitor winning largest number of first prizes in Chrysanthemum classes went to Mr. French, as did also the special prize N.C.S. bronze Centenary medal for best bloom of Mrs. Alpheus Hardy. The competition for this, however, was not keen, though the variety is widely distributed in the district.

Fruit and vegetable classes were well filled, the amateurs here again holding their own well. The English Fruit and Rose Company, Hereford, had a good collection of Apples not for competition, Mr. W. Treseder of Cardiff floral arrangements, and Messrs W. Clibran & Son of Altrincham some stands of Chrysanthemums, which included Annie Clibran, Thos. Stephenson, and Violet Tomlin. Certificates of merit were awarded to each.

DISS.—NOVEMBER 18TH.

THE annual Chrysanthemum Exhibition, which is held in connection with the Diss Horticultural Society, was held at the Corn Hall on Tuesday last week, and was an unqualified success. The cut blooms were of excellent quality, while the plants, classes, and groups were not only well filled but of good quality, and tastefully arranged.

Cut Blooms.—The premier class was for thirty-six blooms Japanese, not less than twenty-four varieties or more than two blooms of one variety, the first prize of which was deservedly awarded to the Rev. l'age Roberts, Scole, for the following collection:—Avalanche, Ralph Brocklebank, Edwin Molyneux, Meg Merrilies, Yellow Dragon, very fine; La Triomphante, M. J. Pigny, Gloriosum, Mons. Tarin, Avalanche, Ralph Brocklebank, M. J. Pigny, Sunflower, La Triomphante, Lady Lawrence, Madame Baco, Fair Maid of Guernsey, Marguerite Marrouch, Mr. J. Laing, Edwin Molyneux, Mlle. Lacroix, Soleil Levant, Triomphe de la rue des Châlets, Marsa, Madame Baco, Sarah Owen, Triomphe du Nord, Sunflower, Mr. J. Laing, Meg Merrilies, Yellow Dragon, Madame C. Audiguier, Triomphe du Nord, Mons. Freeman, Mrs. J. Wright, and Sarah Owen. Mr. Alfred Bishop, Westley Hall, Bury St. Edmunds, followed closely for second honours, his best blooms being Barrone de Prailly, Mr. H. Cannell, Gloriosum, and Triomphe de la rue des Châlets. The Rev. H. S. Hawkins, Beyton Rectory, was a very creditable third. Boule d'Or and Mr. H. Cannell were very fine.

In the class for twenty-four Japanese, not less than eighteen varieties, Mr. R. C. Notcutt, Anglesea Road, Ipswich, wrested the premier honour from the Rev. F. Page Roberts, who was nevertheless a very good second, and Mr. Bishop third. The first prize collection comprised good blooms of *Triomphe de la Châlets*, Mdle. Lacroix, Carew Underwood, *Etoile de Lyon*, Japonais, George Daniels, Lady Lawrence, *Etoile de Lyon*, *Gloriosum*, Lady Lawrence, George Daniels, Stanstead Surprise, Mrs. J. Wright, Charlie Sharman, *Gloriosum*, Mr. H. Cannell, Mrs. H. Cannell, Florence Percy, Mr. H. Cannell, Madame J. Laing, Thomas Stevenson, Mons. Bernard, Sarah Owen. For twelve Japanese, distinct, Mr. F. J. Smith-Palgrave was placed first with a fine stand of Sarah Owen, Mad. Baco, Mr. H. Cannell, *Etoile de Lyon*, Mad. Baco, Ralph Brocklebank, Japonais, *Grandiflorum*, Mad. C. Audiguier, Mrs. J. Wright, Comtesse de Beauregard, and *Triomphe de la rue des Châlets*. Messrs. Notcutt and Bolton shared the other prizes in order of their names. There were several collections of six Japanese staged, and Mr. Smith was awarded the first place for a grand stand, the Rev. Hugh Berners, Harkstead Rectory, running him very close indeed for second honours. In reflexed the Rev. Hugh Berners was a good first with two Cullingfordi, two Golden Christine (very fine), two Dr. Sharp, two White Christine, two Chevalier Domage, two Putney George. Mr. Notcutt was placed second, his blooms being somewhat past, but he had fine flowers of Golden Christine and Cloth of Gold. A very elegant and pretty stand of single blooms was staged by the Rev. Page Roberts, to whom the first award was made; Admiral Symonds, Aurora, Mary Anderson, Paul Clifford, Jane, and Effie were particularly attractive. For six Japanese, one variety, the Rev. H. S. Hawkins was placed first with large and massive blooms of Thunberg, but suffered in appearance by being shown flat on a Rose box. The Rev. Page Roberts was a good second with *Avalanche*, Mr. Bishop exhibiting six good blooms of *Baronne de Prailly*. Some very large flowers of Golden Empress took first honours in the class for six incurved, one variety. For twelve incurved, distinct, the Rev. Page Roberts exhibited a very neat and fresh collection, which obtained for him the first prize, and consisted of Lord Alcester, good; Queen of England, John Salter, Empress of India, Jeanne d'Arc, fine; Lady Hardinge, very good; Miss Haggas, Prince Alfred, Violet Tomlin, White Globe, Baron Beust, and Princess of Wales. Mr. A. Bishop was awarded second honours, and the Rev. H. S. Hawkins third.

Plants.—For a collection of six, Mr. Smith was a very good first with profusely bloomed plants of Madame J. Laing, Peter the Great, *Triomphe du Nord*, M. J. Pigny, Fernand Feral, and Golden Empress. Mr. Bolton, Shrimphill, was placed second, and J. Tudor Frere, Esq., third, and in the other classes of plants the same exhibitors shared the honours. Several good groups of miscellaneous plants were arranged around the sides of the hall, the best coming from Tudor Frere, Esq., a very bright arrangement indeed. F. Taylor, Esq., M.P., obtained the second award; an extra prize being awarded to Mr. Bolton, whose collection evinced taste in arrangement, but wanting in finish and colour. Several pretty arrangements of Chrysanthemums and Ferns suitable for centre of table were exhibited. Miss Frere, Roydon, was first; Miss Smith, second; and for a similar arrangement, including foliage and berries, the first was awarded to Miss Savoury, Palgrave. During the day there were a large attendance, most of the *élite* of the neighbourhood being present. The arrangements were well carried by the Rev. Page Roberts, the indefatigable Hon. Secretary.

CARDIFF.—NOVEMBER 18TH AND 19TH.

THE Park Hall is an excellent place to hold a Chrysanthemum Show in, being roomy, and what is a decided advantage, plenty of light is available, which is a great gain. This cannot be said of all sites chosen for autumn exhibitions, many having a dark heavy aspect, which is all against the appearance of the flowers in dull weather. Cut blooms made by far the most important feature of the Show, although groups of Chrysanthemums were strongly represented. Specimen plants were in quality a long way below what are generally seen at almost any provincial exhibition, by far too many sticks being visible, the plants having been allowed to grow excessively tall.

Cut Blooms.—For twenty-four distinct kinds, irrespective of any section, there were five competitors, the best, a medium-sized even lot, coming from Mr. J. Horne, gardener to J. T. Masters, Esq., Cardiff, who staged half of them incurved and the remainder Japanese, the varieties being as follows—Incurved: Violet Tomlin, Queen of England, Lord Alcester, Prince Alfred, Princess Teck, C. Gibson, Empress Eugénie, Miss Haggas, Mr. Brunlees, Princess Beatrice, Mr. Bunn, Mrs. Heale. Japanese: Boule d'Or, Madame Baco, Mrs. Cannell, Carew Underwood, M. Brunet, Jeanne Délaux, Duchess of Albany, Bertha Flight, Mr. H. Cannell, Belle Paule, Charlie Sharman, and Sunflower. Mr. F. Case second, who staged mainly Japanese varieties; Mr. S. T. Wright, gardener to J. Lee Campbell, Esq., Glewston Court, Gloucester, third. For twelve incurved, distinct: First, Mr. N. Ryder, gardener to H. W. Thompson, Esq., Cardiff, with medium-sized neat blooms of Hero of Stoke Newington, Mr. Brunlees, Mabel Ward, Golden Empress, and Nil Desperandum as the best. Mr. W. Treseder, Cardiff, second; third, Mr. H. Rex, gardener to C. Waldron, Esq., Cardiff. For twelve Japanese, Mr. Horne was first with good blooms of the following—Ralph Brocklebank, Stanstead Surprise, Mrs. Cannell, Duchess of Albany, E. Molyneux, *Avalanche*, Sarah Owen, Madame C. Audiguier, Florence Percy, Sunflower, Charlie Sharman, and Mdle. Lacroix. Second, Mr. Treseder; Mr. S. Clark, gardener to Col. Hill, Cardiff, third; very close in a strong competition. Amateurs and cottagers staged strongly in the classes set apart for them, and made a good display.

Groups of Chrysanthemums, to occupy a space of 60 square feet, were staged by five competitors, the best coming from Mr. F. Case, the plants carrying good blooms neatly arranged. Mr. Treseder second. Mr. J. Julian, gardener to J. Gume, Esq., Cardiff, third. Specimen Chrysanthemums were best shown by Mr. H. W. Thompson. A capital specimen of Golden Christine was staged by Mr. G. Hawkins, gardener to Col. Tuberville, Cardiff, in the class for one incurved or reflexed, which had sixty fully developed blooms; a grand plant. Madame de Sevin, most freely flowered and loosely trained, won first honours for specimen Japanese for Mr. Hawkins, also bouquets and wreaths were well shown, Messrs. Perkins, Coventry, winning easily in both classes.

Fruit made a good display, the best lot of five dishes coming from Mr. S. T. Wright, Gros Colman, Muscat of Alexandria Grapes, and Beurré Diel Pears being the best. Mr. Hawkins second. For two bunches of black Grapes Mr. Wright led with Gros Colman; Mr. Case second with the same sort. Mr. Hawkins was first for the same number of white bunches with Muscat of Alexandria. Mr. G. Hawkins staged the best Pears, and Mr. Wright the best Apples, both having good examples in their different classes. Vegetables were a strong feature. For six varieties Mr. W. Moore, gardener to G. M. Treherne, Esq., was first, Mr. Hancock second, and Mr. Pugsby, gardener to General Lee, Dynas, third.

BRISTOL.—NOVEMBER 19TH AND 20TH.

WHAT proved to be one of, if not the very best displays ever made by this old Society was arranged in the Colston Hall, a noble building admirably adapted for the purpose. Although ostensibly a Chrysanthemum Show, nearly everything else in the way of flowers, fruit, and vegetables were equally well represented. The Committee is largely composed of practical gardeners, Mr. Wilfred Jones being the Secretary, and all are to be congratulated with the great success, pecuniarily and otherwise, that attended their efforts.

In the specimen plant classes there was a want of freshness only too apparent in many instances, and this is not to be wondered at considering the lateness of the fixture and the unfavourable state of the weather, so far as the lasting properties of the flowers were concerned. The entries were fairly numerous, and the principal prizewinners were Messrs. T. W. Gibson, J. Leech, T. M. Miller, and H. St. Vincent Ames. Messrs. J. Dole and F. Baskerville were the prizewinners, in the order named, for groups of Chrysanthemums to occupy a space 12 feet by 7 feet, but most of the plants shown were past their best. There were also classes for ornamental-foliaged plants, table plants, Ferns, Poinsettias, Primulas, ornamented fruited plants, Mignonette, Bouvardias, Zonal Pelargoniums, and Orchids, in all of which the competition was close and good. The principal prizewinners were Messrs. A. W. Summers, G. White, J. Dole, S. W. Gibson, J. Boddam Castle, R. Cripps, W. Cooper, D. R. Bain, C. D. Cave, J. West, J. Walls, and H. Laves. Groups of miscellaneous plants to occupy a space 10 feet by 5 feet were of their usual excellence, and in this class Mr. W. K. Wait was first, Mr. J. B. Brain second, and Messrs. James Garaway & Co. third.

Cut blooms were well and largely shown, there being eight entries in the class for forty-eight, to consist of equal numbers of Japanese and incurved, not less than eighteen to be distinct, and not more than two blooms of any one variety, and for which the first prize was £10, the second £6, and the third £4. After a very careful scrutiny the first prize was awarded to Mr. Cooper, gardener to C. L. Collard, Esq., Taunton; Mr. J. Aplin, gardener to W. Meath-Baker, Esq., Gloucester, who was only eight points behind, taking second place; Mr. Runnacles, Sherborne, being a good third, while an extra prize was awarded to Mr. J. Austin, Witley, who also had a beautiful lot of blooms. The varieties shown in the premier stands consisted of—Incurved—back row: Golden Empress of India, Empress of India (two), Lord Wolseley (two), Lord Alcester (two), Alfred Salter. Middle row: Lady Carey, Princess of Teck, Miss M. A. Haggas, Queen of England (two), Mr. Howe, Mrs. W. Shipman, and Hero of Stoke Newington. Front row: Mrs. Heale, Mrs. N. Davis, Eve, Barbara (two), Violet Tomlin, Lady Dorothy, and Lord Everslev. Japanese—back row—*Etoile de Lyon* (two), *Avalanche*, Boule d'Or, E. Molyneux, Japonais, Stanstead White, and Sunflower. Middle row: W. W. Coles, R. Brocklebank, Baronne de Prailly, M. J. Pigny, Thunberg, Madame J. Laing, J. Délaux, and Meg Merrilies. Front row: Mrs. C. Wheeler, Madame Baco, Sarah Owen, A. H. Neve, Marsa, Album Fimbriatum, Mrs. J. Clarke, and Thomas Gartledge. Mr. Aplin was well first with twenty-four blooms of incurved varieties, Mr. Runnacles being second, and Mr. Carpenter third. In the corresponding class for Japanese varieties the competition was very keen. Mr. Cooper was first, Mr. Aplin a close second, and Mr. G. Runnacles third. These and the other growers mentioned were the principal prizewinners in the other classes for cut blooms. A special prize of 10s. was offered for a single bloom of the Japanese Mrs. Alpheus Hardy, and for this three competed. Mr. Aplin had a grand bloom, and was easily first.

Vases, bouquets, and wreaths are always a feature at the Bristol shows, and they were both numerous and excellent on this occasion. Messrs. Meakins, C. Winstone, and E. T. Hill were the most successful with vases, and also with baskets of autumn foliage and berries, all of which were very beautiful. Hand bouquets were especially good, and it is worthy of note that a local florist, Mr. C. Winstone, succeeded in beating Messrs. Perkins & Sons, who were second, Messrs. Garaway and Co. being a creditable third. Wreaths of white flowers again were very lovely, and with these Messrs. Perkins & Sons were first, Mr. C. Winstone second, and Messrs. Garaway & Co. third.

Fruit was exceedingly plentiful, and considerably above average merit. There were no less than eight classes for Grapes, and in every

instance the competition was most keen. Mr. Stevens, gardener to E. D. Cave, Esq., was first for Black Hamburg and also for Muscat of Alexandria, the latter being particularly good. So, also, were the first prize bunches of Alicante staged by Mr. R. Cripps; Gros Colman and Alnwick Seedling by Mr. W. Nash, gardener to the Duke of Beaufort; Lady Downe's by Mr. J. Gibson, gardener to Lord Cowley; and Mrs. Pince by Mr. W. G. Pragnell, gardener to J. K. D. Wingfield Digby, Esq., who each fully merited the first prize awarded to them in the respective classes. Mr. J. Austin had a first prize for a handsome Smooth Cayenne Pine. Pears, again, were very numerous and exceptionally good throughout. Mr. W. Bannister was first for both six varieties and four varieties, the examples of Marie Louise, Maréchal de la Cour, and Pitmaston Duchess shown by him being remarkably fine. Mr. W. G. Pragnell was a close second in both classes. Messrs. Bannister, Pragnell, Virgo, and Runnacles were most successful with Apples. Mr. W. Nash was well first for an excellent collection of six dishes of fruit; and Mr. G. Pymm, gardener to Mrs. Goldsmith, a creditable second. Vegetables were also well shown, the first prize collection of eight varieties, grown and very effectively arranged by Mr. Bannister, being worthy of special mention.

SWANSEA.—NOVEMBER 19TH AND 20TH.

THE Swansea and District Chrysanthemum Society held their first autumn Exhibition in the Drill Hall on the dates named, and for a first attempt must be considered satisfactory. No doubt by experience a better system of placing the prize cards on the exhibits will be adopted. In the present case it was late in the afternoon before this was accomplished. The site is an excellent one, but will probably be found too small a building to place the exhibits if the competitors increase, as no doubt they will if the present prize list is maintained, as no doubt it will be, or even increased. Much interest appears to be taken in the growth of Chrysanthemums in this district under unfavourable circumstances, such as the want of fresh air, caused by the number of furnaces in the adjoining neighbourhood. Mr. Roberts, Honorary Secretary, worked hard to render the affair a success. Our report cannot be otherwise than a meagre one for the cause named.

Groups of Chrysanthemums were staged by five competitors, the space being a large one—64 feet—and on the whole were creditable. Especially meritorious was the first prize one if we except the front, which required a little more finish. Specimen plants were very well staged in a few instances, while others were simply of the ordinary tall growth, showing too many stakes. Bouquets and wreaths were a capital show; those from Mr. T. Barron, florist, Swansea, who secured first prizes in each class, were especially noteworthy, white Lilac being largely used in the wreath, which added considerably to its beauty. Table plants, Primulas, and Cyclamens were staged in numbers. Vegetables were a strong feature, and on the whole of excellent quality.

Fruit was good in quality, if small in quantity, a remarkably fine dish of Vicomtesse Hericart de Thury Strawberry being exhibited in the first prize stand for a collection of fruit.

Cut blooms were the principal feature of the Show. Good prizes were offered in all the classes; it was surprising not to find more competitors in consequence. For forty-eight distinct varieties, half incurved and the remainder Japanese, there were but two entries. Mr. Ireland, gardener to Sir Hussey Vivian, Singleton, Swansea, was an easy first, with medium-sized, neat blooms, creditably staged.

Messrs. Clibran & Sons had, "not for competition," four dozen blooms of leading new and older varieties, Mr. T. Barron dwarf plants of Chrysanthemums, and Messrs. W. Wood & Sons, Wood Green, London, a stand of their horticultural sundries.

TIVERTON.—NOVEMBER 20TH.

THIS fixture was decidedly late for a south-western district; but only in a few instances was there a want of freshness apparent, and a really good all-round display was made, there being quite as many exhibits as the Drill Hall would hold. Great interest appears to be taken in the Society by many of the leading inhabitants of the town and locality, and the arrangements made by the Committee and very efficient and courteous Honorary Secretary, Mr. R. P. Cosway, gave general satisfaction.

In the plant classes the greatest prominence was given to the groups, and with these there was good competition. The best out of five occupying a semicircle with an external radius of not more than 6 feet was shown by Madame las Casas, this comprising very healthy plants, carrying fresh large blooms in good variety. The Rev. G. Hadow was second, the blooms in this case being more numerous but smaller, and the foliage poor. Colonel Greatwood was third. With smaller groups Mr. Lane was a good first, Mr. G. H. Spring second, and Mr. Martin third. No formally trained plants were shown, the prizes being won in various classes by well grown and freely flowered conservatory plants. The principal prizewinners were the Rev. T. U. Cross and Colonel Greatwood. Groups of Zonal Pelargoniums were novel and very effective. Mr. G. J. Barnes, gardener to T. C. Daniel, Esq., was well first in this class, the Rev. T. U. Cross second, and Major Carelton third. Messrs. Tottle, Taunton, G. J. Barnes, J. A. Pleass, and W. H. Dunsford were successful in the plant classes.

Cut blooms were fairly numerous, the competition being good in every class. Prizes of £4, £2 and £1 were offered for thirty-six Chrysanthemums, eighteen incurved and eighteen Japanese, not more than two of each, and there were five to be staged. The Judges, however, had no difficulty in awarding premier position to Mr. G. J. Barnes, who

had a fine fresh lot of blooms, consisting of the following varieties—Incurved: Lord Alcester, Hero of Stoke Newington, Novelty, Lord Wolseley, Lady Hardinge, Bronze Jardin des Plantes, C. Gibson, Lady Dorothy, Lord Eversley, Golden Empress, Princess of Teck, Alfred Salter, and Barbara. Japanese: Etoile de Lyon, E. Molyneux, Meg Merrilies, Val d'Andorre, Lady Lawrence, Sunflower, Golden Dragon (very fine), Mrs. W. E. Clark (good), Stanstead White, Boule d'Or (extra good), L'Automne, and Ralph Brocklebank. Mr. W. Dolling, gardener to Mrs. Wild, was second, and Mr. T. Knapman, third. Mr. G. J. Barnes was first for eighteen blooms of Japanese varieties, his stands comprising very fine fresh blooms of Baronne de Prailly, Etoile de Lyon, Meg Merrilies, Ralph Brocklebank, Angele Amiel, Lady Lawrence, Moonlight, Gloriosum, Stanstead White, Mrs. W. E. Clarke, and Golden Dragon. Mr. W. H. Fowler, Taunton, who exhibited so successfully at the Aquarium, was a good second, his best being Etoile de Lyon, Meg Merrilies, Carew Underwood, Pelican, Mrs. H. Cannell, Avalanche, Sarah Owen, Moonlight, Ralph Brocklebank and L'Or du Japon. The best twelve Japanese varieties were shown by Mr. S. Tottle, Sir John Walrond, Bart., being second; and with six varieties Mrs. North-Row was first and Madame de las Casas second. Mr. G. J. Barnes was easily first for eighteen blooms of incurved varieties, the best of these being Lord Alcester, Hero of Stoke Newington, G. Gibson, Lord Eversley, Mrs. N. Davis, Mrs. Heale, Novelty, Lady Dorothy and Princess of Teck; Mr. W. Dolling was second. Mr. S. Tottle had a first for twelve incurved varieties, and with six ditto Mrs. North-Row was first and Col. Greatwood second. The best six blooms of reflexed varieties were shown by Mr. J. Lloyd, gardener to Vincent Stuckey, Esq., Langport, Mr. S. Tottle being second, while the prizewinners with Anemone flowered varieties were Messrs. T. Knapman and Dolling. A class for twelve mixed varieties was novel and attracted good competition, Mrs. North-Row was first and Madame de las Casas second.

Twenty-nine classes were provided for Apples and Pears, and nearly all of them there was good competition, consequently a fine Show was made. The principal prizewinners were Lady Duckworth, Sir J. Walrond, and Messrs. Lloyd, W. C. Sim, S. Tottle, T. Knapman, G. J. Barnes, G. Babbage, and Mrs. Lane. In addition there were also extensive displays of Apples and Pears by Messrs. R. Veitch & Son, Exeter; C. T. Sclater, Exeter; and Jarman & Co., Chard. The first and last named added to the effectiveness of their exhibits by good backgrounds of plants and cut blooms.



FRUIT FORCING.

FIGS.—Early Forced Trees in Pots.—These require a light, properly ventilated, well heated structure. They are the better of a bed of leaves, in which the pots must not be plunged, but pedestals of loose bricks erected in the pit, and on these the pots should be stood. The pit being filled with leaves will generate a moist genial heat, highly favouring vegetation, but the fermenting materials must not be brought up too high or pressed very firmly about the pots or it is probable the Figs will be too highly excited by the heat. By placing the leaves loosely around the pots a gentle warmth of 65° may be had, and by adding more leaves a regular temperature should be assured. This is very important; the trees must not be hurried by too much bottom heat, but as the fermenting material settles more should be added and pressed firm, being very careful not to allow the heat about the pots to exceed 65° and 70° at their base. Maintain a temperature of 50° artificially until the buds are swelling freely, when the temperature may be increased to 55° at night, 60° by day by artificial means, admitting a little air at that, and allowing an advance to 70° to 75° from sun heat, closing at 65°. With the moisture constantly being given out by the fermenting materials there is less need of syringing. A sprinkling of the trees and house in the morning and early afternoon will be sufficient in bright weather; morning sprinkling will only be needed in dull weather.

Young Trees Intended for Early Forcing.—It is practically useless attempting very early forcing trees that have not been prepared for the process. Young trees, therefore, intended for early forcing in pots another season should be shaken out and repotted, starting them into growth shortly or at once, so that they may make the necessary growth and complete it early, so as to have time to rest before being forced for fruiting. For general purposes no Fig is equal to Brown Turkey; for very early Early Violet is worth place, and as a companion white to Brown Turkey, White Marseilles. Both are very free fruiting and require liberal treatment.

Early Forced Planted-out Figs.—It is necessary that the roots be confined to inside borders, and it is well if these are limited to areas considerably less in extent of surface than the trellises. To have ripe Figs in May the house must now be closed, but where the earliest Figs are had from trees in pots starting of the trees planted in borders may be deferred until the new year, so as to have fruit ripe early in June and afford a succession to the pot trees. If the trees planted out be now

started they will afford a closer succession, and there is nothing so fatal to a first crop as bringing the trees on too rapidly. Water in a tepid state should be applied to the roots at frequent intervals until the soil is thoroughly moistened, introducing thoroughly sweetened leaves and stable litter in ridge form into the house to produce a moist genial condition of the atmosphere, and to induce gentle steady excitement, as well as to economise fire heat. Commence with a temperature of 50° at night, 55° by day, and 65° from sun heat, syringing the trees and every available surface with water slightly in advance of the temperature of the house in the morning and early afternoon unless the weather be dull and cold, when the morning syringing only should be practised. Admit air moderately whenever the weather is mild, closing the house with sun heat at 65°, or if it exceed that with full ventilation close the ventilators when the sun heat begins to decline.

PLANT HOUSES.

Hydrangeas.—Varieties of *H. hortensis* that were rooted early, and were thoroughly matured before the approach of frost, have lost their foliage. These may be placed into 4½-inch pots as opportunity offers, and stood in a cool house ready for starting into growth. One crock at the base of each pot will be ample, and the compost may consist of loam, one-seventh of manure, sand, and a little leaf mould. The soil in which Cucumbers and Melons have been grown with the addition of leaf mould and sand will grow them well. Those rooted later and having plump buds with fresh foliage attached should be kept until the foliage ripens off naturally where the temperature will not fall below 45°. Any of the plants that have not their buds thoroughly developed should be placed on a shelf close to the glass where the temperature can be kept 5° higher.

Hydrangea paniculata grandiflora.—Those who have well developed plants may lift and place them into 5 and 6-inch pots, according to their size. Prune these close back, and place them in cold frames. Plants that have been in pots throughout the year may also be pruned back and top-dressed with rich material or placed into slightly larger pots.

Spiraea japonica.—Lift and repot the number of plants required for forcing. After potting plunge the pots of those not to be started forthwith in ashes. They will be better outside, and force more readily than if placed in frames. Any clumps that have not bold flowering crowns should be placed aside and cut into two or three according to their size and replanted again for another season. Plants that flowered well outside last year will be in capital condition for dividing. The secret of success in growing *Spiraeas* that will flower as freely as imported plants is to plant only those that have small or moderate crowns—that is, crowns that will not flower; in one season they will develop into strong flowering crowns. Plants that flower profusely outside are useless for forcing, because a number of crowns spring from the base and they have not sufficient time to develop the same season. Select a sunny position. The sooner next season's stock are planted the better. If clumps for 5-inch pots only are grown they should be planted 1 foot apart each way, if larger allow 6 inches more between the rows.

Dielytra spectabilis.—For years we have not bought these, but relied on home-grown plants. Lift established plants, and divide them according to the size pots in which they are to be forced. Pieces with small weak crowns should be planted for next year's supply of plants. Divide these into two batches, and plant the smallest closer together so that they can be grown for two years before forcing them. Once a stock is obtained the best plan is to lay in those that have been forced for division in autumn for the following season's supply of plants. One good plant will often make two, or suitable ones for larger pots if planted without being divided. In this case they should be planted, after being hardened, where they are to stand the two seasons. Place those that are potted into cold frames for a short time, and then introduce them into Peach houses or vineries that are just started. Few plants are so easily forced as *Dielytras*. They naturally start early into growth, and being of a light graceful habit of growth are telling in any arrangement. The white form of this old favourite is well worth growing.

French Pelargoniums.—These are frequently ruined by too close or confined an atmosphere. Where houses are not specially devoted to them, which is seldom the case in private gardening establishments, the general stock will be at home on the shelves of vineries and Peach houses, close to the glass and fully exposed to light. All that they need is protection from frost; as long as the temperature does not fall below 35° they will be safe. The liberal ventilation at this season that these structures receive suits them admirably. Growth is slow, but it is strong and sturdy. Old plants subjected to this treatment that were cut back in August will be ready for pinching in February and their final shift. Cuttings rooted from these plants will now be growing freely and ready for 5-inch pots; they should have the same treatment. Use for a compost fibry loam, one-seventh of manure and sand; pot firmly. Pinch any shoots that need it on these young plants. Earlier plants will be rooting freely in 5-inch pots. A little artificial manure may be applied to the surface of these every three weeks. Do not pinch the shoots again if the plants are required to flower early. Give them the same liberal ventilation, and keep the temperature for these from falling below 40°. In whatever stage of growth the plants are, be careful not to give them too much water; on the other hand, do not allow them to become dust dry. The syringe is not needed; these plants are better without it. Aphides will not give much trouble if this treatment is followed.

THE BEE-KEEPER.

RESULTS OF HIVES.

I PROMISED to give "A Lanarkshire Bee-keeper" the result of my hives. But thinking it may interest others have forwarded it to you. I have three hives, two being the Lanarkshire square hive, the other on the standard principle, containing eleven bars, each 12½ by 8½ inside measurement. One of the Lanarkshire hives were made up last autumn by driving two skeps, uniting the bees, and giving them a pure Carniolian queen I obtained from Neighbour & Sons, and fed up with 20 lbs. of sugar, besides four bars I took from the other hive of the same kind. They swarmed June 16th, also a cast on July 1st, that I threw back when hived. It was my intention to have destroyed all queen cells except two a few days after the first swarm; but my time being taken up with haymaking bees had to take their chance. At the end of the season they had from 10 lbs. to 15 lbs. of stores. I feed with 20 lbs. of sugar, and expect better results next year, as they have a young queen at their head. They had two boxes, but did not work much in the lowest one; therefore I did not give them the third till the end of August, when feeding for winter.

The other two hives were equal as regards stores in the autumn of 1889; but the spring of this year the Lanarkshire hive was very short of stores, only about 5 lbs. I was surprised at the time, but now see where I was wrong. I had not used any outside covering, and, as explained in this Journal (No. 539, October 23rd), being single-cased hives, the temperature was always varying with the temperature outside, therefore consuming more food. I fed with 6 lbs. of sugar, and left them to themselves. At the end of the season I took 33 lbs. in sections, and 18 lbs. after being run from the lowest box containing the oldest combs. There was still left over 20 lbs. in the two other boxes. I gave them the third box with fresh combs, and feed with 20 lbs. of sugar for winter. The other (standard) hive was well up for stores, therefore had no feeding. I took 30 lbs. in sections and 5 lbs. of run honey; there remained in hive between 8 lbs. and 10 lbs. These I also feed with 20 lbs. of sugar, and likewise prepared for winter.

I have three neighbours, each about a quarter of a mile from here, that are bee-keepers in a small way like myself, they having the standard hive. One said he has very little honey indeed. Another took 20 lbs. in sections from two hives. The third person has just his hives. One in the above hive has been neglected in this way. The young lady in 1889 opened the hive to take off some sections; on drawing one the bees appeared, the lady in her fright pulled down the lid and departed. At the end of the season of 1889 the hive was visited by an outdoor servant, he found the bees very strong, working as much from under the lid as at the entrance of the hive. It happened when the lid was pulled down it rested on some of the coverings used in wrapping up the sections. This man got stung so much that he would have no more to do with them, so the bees were left to their own course till October, 1890, when they were sold, the bees destroyed. On opening the hive, comb was built from roof to floor, the quantity of honey being 38 lbs. I was surprised on hearing the quantity of honey this hive had, as I thought it would have been much more than 38 lbs., considering it was honey from two seasons.—R. A. C., *Sevenoaks*.

TO CORRESPONDENTS

* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Maggots in Soil (*H. J. W.*).—What you send are maggots, not caterpillars, and in their present stage cannot be named. It is not in the least unlikely they have been conveyed in the manure; but as you say lime kills them they will do no harm, and the application will otherwise improve the soil, and be of benefit to the plants.

Potash for Cleansing (*Somerset*).—We do not find the article to which you refer; possibly you have not given a correct reference.

However, carbonate of potash, commonly called pearlash, is usually used for cleansing purposes, and it is a little surprising your chemist did not know it.

American Blight (*F. N. and J. S.*).—We not only consider it a wasteful, but a dangerous practice, dressing trees with pure petroleum for the destruction of this pest, for we have known the application to kill trees as well as insects. The mixture recommended on page 392, our issue of October 30th, is safe, and also effectual, if properly used.

Chrysanthemum Sport (*H. C. B.*).—The bloom received is very loose, and we scarcely suppose that the variety will be of material value when better grown, as it appears to be more like a reversion to the Queen of England than anything else. You had better, however, try it another year, as there is the possibility of its developing qualities that are not apparent in the specimen before us.

Weeds in Lawn (*C. T.*).—We have known lawns greatly improved and Daisies killed by applications of lawn sand, but it will not kill deep rooted plants, such as Plantains and Dandelions, but a drop or two of oil of vitriol placed exactly in the centre of each will. The method of application has been often and recently described. Your lawn is no doubt poor, and a free dressing of soot and wood ashes might do it much good. We have known an old lawn dug up, the land cleaned, grass seeds sown, and a firm, close, new lawn formed in eight weeks, the work commencing in March.

Trimming Baskets of Chrysanthemums at Exhibitions with Ribbons and Silk Scarves (*J. R. N.*).—It is usual to allow a full license to ladies' exhibits in these matters, in which it must be admitted they make a very interesting and diversified display. Of course in adjudicating, these trimmings must be made quite secondary to the flowers and their arrangement. Where there are better flowers and better taste in arrangement it would not be wise to withhold a prize because the exhibit was displayed in rich shades of satin and silk. Some people besides the ladies like these displays, but it would be well if such exhibits were "trimmed with natural sprays and leaves" only, or at least confined to the floral arrangement. The basket proper might be trimmed in any way the exhibitor saw fit.

Old Rubbish-heap Soil for Levelling Lawn (*Subscriber*).—You could not have anything better than the *débris* of the rubbish heap reduced to mould passed through a half-inch sieve for dressing the lawn. It will be better for filling up the inequalities in the surface than decomposed manure, and sufficiently invigorate the grass. Spread it evenly on the surface, allow it to lie a few days, and then make level with the back of a wooden or hay rake, by which the inequalities of surface will be removed. If deep the hollow places must have the turf raised and soil placed under, as the grass must not be deeply buried; but small inequalities are readily filled in the manner indicated. It should be done now—the sooner the better, and must not be deferred beyond February.

Plum and Other Fruit Tree Stocks (*J. B.*).—The Muscle or Mussel stock is raised from stones of the Plum of that name, sown now or earlier in drills 2 inches deep and 1 inch asunder, the drills 9 to 12 inches apart. The stones are not usually in commerce, but stocks may be had of most the large fruit growing nurserymen. We, however, have a rule, for obvious reasons, not to recommend dealers. The stocks or suckers for that purpose from Victoria Plums will answer, but they are not so good as those raised from seed, which are less liable to throw up suckers. The English Broad-leaved Paradise stock is raised from layers, and is grown extensively. Quince stocks are also raised from layers, and may be had of any large grower of fruit trees for sale. The Angers Quince is perhaps best, but the Portugal is largely used.

Crassane Pear Growths Thorny (*B. D. K.*).—It is not unusual for some Pear trees in their young state to have long thorny spurs, some of them, as in your case, very sharp. They are more disposed to produce the thorny growths on the free or Pear stock than on the Quince, for they bear earlier and produce fruitful growths on the Quince sooner than on the Pear stock, but they have the thorns on both stocks when young and extra vigorous. It is not likely the tree is on the White Thorn, as nurserymen very rarely use it as a stock, but it may be on the wild Pear, which is very spiny, and on that account makes a good hedge plant, particularly near the sea. In that case even the thorny character of the stock would not be imparted to the scion or graft, which retains its characteristics on any stock, therefore the spines are due to the variety—a tendency to produce thorny growths when young and vigorous. It is easy to distinguish the stock on which the tree is worked, as there is a considerable difference between a Pear and a Quince in their barks. The tree will outgrow the thorny spurs as it gains fruitfulness.

Dracæna Leaves Withering (*T. L.*).—If the soil is suitable, and no mistake made in watering, the cause of the evil must be ascribed to the temperature or atmosphere of the house. It may be too cold at times, giving a check to the movement of the sap, or too dry occasionally, if not always, causing an excess of evaporation, or an escape of moisture in greater ratio than supplied by the roots. It is quite certain the leaves are in some way deprived of the support that is requisite for their health. Possibly when you obtained the plants they had been grown in a higher temperature and moister atmosphere than your house affords, and they therefore received a check at the outset from which they have never recovered. The injury would not be apparent for some time. You had better remove all the injured leaves, and it might be desirable to notch the tops and place damp moss or moist soil round

them to induce the emission of roots and so establish dwarf young plants with healthy leaves down to the soil.

Mildew and Insects on Vines (*Ancient Subscriber*).—The greater part of what, at the first glance, looks like mildew on the leaves, is sulphur. This has evidently been applied freely to both the under and upper surfaces, and has killed most of the mildew, which was not, however very prevalent, and what little remains now is the result of the natural decay of the foliage, and will do no appreciable harm. Only on one leaf could we find traces of mealy bug, but on closely examining the berries we discovered a number of the unwelcome insects clustering round the base of the footstalks, and crowding under the part that connects with the fruit. It is easy enough to deal with the insects on the foliage, for all the leaves that are as far advanced in maturity as those sent, or which are nearly ready for falling, can be removed by the hand (leaving the stalks for a time) and burned. When the leaves are nearly ready to fall they have done their work, and are of no further use to the Vines, and when there are insects on them it is obviously better to remove them in the manner suggested than to let them remain to be scattered all over the house. Dealing with those on the fruit is a different and more difficult matter. Several of them are not very apparent, but a good magnifier reveals their presence. We advise you to make an experiment on a few berries or bunches, and we shall be glad if you will inform us of the result. Procure some methylated spirit, and apply it with a very small brush or feather, working it under the fissure that you will find at the top of the berries, for it is there where the insects are ensconced. The spirit will destroy all those to which it is thoroughly applied, and possibly may not injure the skins of the berries nor impair their quality. This is what we should like you to ascertain. After the Vines are pruned they must be thoroughly washed with an insecticide, also every part of the house and everything in it. Also, if the Vines are planted inside, the surface of the border must be removed, all dry parts made thoroughly moist, and fresh soil added. It is only by rigid cleanliness and constant watchfulness that this dread enemy of Vines can be extirpated. Its attack in your case is not half so bad as many we know, and you ought to be able to conquer the foe. If prompt and energetic measures are not taken, it will spread rapidly another year.

Names of Fruits (*J. Rimmery*).—1, Nouveau Poiteau; 2, Bishop's Thumb; 3, Knight's Monarch; 4, Burr Knot. (*A. C. McIntosh*).—1, Ribston Pippin, fine specimen; 2, Rhode Island Greening; 3, Josephine de Malines; 4, Beurré d'Arenberg; 5, Swan's Egg. (*Armagh*).—1, Golden Noble; 2, Maltster; 3, Pomeroy; 4, Dumelow's Seedling; 5, Mère de Ménage; 6, Not known.

Names of Plants (*J. B. S.*).—*Cotoneaster frigida*. Thanks for the excellent specimens. (*W. G.*).—Your variety of Chrysanthemum is practically the same as Sarah Owen, also a sport from Mrs. John Laing. (*A. G.*).—*Corydalis lutea*. (*A. E. C.*).—We fail to see any resemblance to the variety Mr. Freeman in the sport sent; it is something like M. Elliott.

COVENT GARDEN MARKET.—NOVEMBER 26TH.

BUSINESS steady, with scarcely any alteration in prices.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, $\frac{1}{2}$ sieve	1	6	to	6	0	Lemons, case	20	0	to 23 0
" Nova Scotia and						Melons, each	1	0	2 0
Canada, per barrel	15	0	26	0		Oranges, per 100 ..	4	0	9 0
Grapes, per lb.	0	9	3	0		St. Michael Pines, each..	2	0	6 0
Kentish Cobs	65	0	70	0		Strawberries, per lb. ..	0	0	0 0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes, dozen	0	0	to	0	0	Mushrooms, punnet ..	1	6	to 2 0
Beans, Kidney, per lb. ..	0	6	0	0		Mustard & Cress, punnet	0	2	0 0
Beet, Red, dozen	1	0	0	0		Onions, bushel	3	0	4 0
Brussels Sprouts, $\frac{1}{2}$ sieve	1	9	2	0		Parsley, dozen bunches	2	0	3 0
Cabbage, dozen	1	6	0	0		Parsnips, dozen	1	0	0 0
Carrots, bunch	0	4	0	0		Potatoes, per cwt. ..	3	0	4 0
Cauliflowers, dozen ..	2	0	4	0		Rhubarb, bundle	0	2	0 0
Celery, bundle	1	0	1	3		Salsafy, bundle	1	0	1 6
Coleworts, doz. bunches	2	0	4	0		Scorzonera, bundle ..	1	6	0 0
Cucumbers, doz.	2	0	3	6		Seakale, per bkt.	2	0	2 6
Endive, dozen	1	0	0	0		Shallots, per lb.	0	3	0 0
Herbs, bunch	0	2	0	0		Spinach, bushel	1	0	2 0
Leeks, bunch	0	2	0	0		Tomatoes, per lb. ..	0	4	0 8
Lettuce, dozen	0	9	1	3		Turnips, bunch	0	0	0 4

CUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	4	0	to	8	0	Narciss (Paper-white),			
Bouvardias, bunch	0	6	1	0		French, doz. bunches ..	4	0	to 10 0
Carnations, 12 blooms ..	1	0	2	0		Do. Do. English,			
Chrysanthemum, 12 blms.	1	0	3	0		per bunch	1	0	1 6
" 12 bunches	3	0	9	0		Pelargoniums, 12 trusses	0	9	1 0
Epiphyllum, doz. blooms	0	4	0	6		" scarlet, 12 bnchs	4	0	6 0
Eucharis, dozen	3	0	6	0		Poinsettia, dozen blooms	4	0	9 0
Gardenias, 12 blooms ..	4	0	6	0		Primula (double) 12 sprays	0	6	1 0
Lapageria, 12 blooms ..	2	0	4	0		Roses (indoor), dozen ..	0	6	1 6
Lavender, dozen bunches	0	0	0	0		" Red, 12 blooms ..	1	0	2 0
Lilac (French) per bunch	5	0	7	6		" Tea, white, dozen ..	0	6	2 0
" longiflorum, 12 blms.	4	0	6	0		" Yellow	3	0	5 0
Maidenhair Fern, dozen						Tuberose, 12 blooms ..	0	4	0 9
bunches	4	0	9	0		Violets (Parme)	2	6	3 6
Marguerites, 12 bunches	2	0	6	0		" (dark)	1	0	2 0
Mignonette, 12 bunches ..	3	0	6	0		" (English), doz. bnch	1	0	2 0
Mimosa (Fench.) per bnch	0	9	1	0		Wallflower, doz. bunches	3	0	6 0



A DAIRY FACTORY.

DURING the past ten years many efforts of a novel character have been made for the improvement and development of the resources of agriculture, especially by landlords whose interests are bound up in the land, and who have striven to do something to ameliorate the condition of farmer and labourer by enabling both classes to help themselves. Some failures there have been, and much so-called success has proved a very doubtful blessing indeed, but in the guise of dairy factories there can be no doubt that real assistance has been given to all who have been able to turn the special advantages which they offer to full account. Attention has already been called by us to Lord Hampden's factory at Glynde, in Sussex, and in this paper an account of what is known as the Harleston Dairy Association will be given in sufficient detail to convey a clear idea of the cost of the establishment of such a factory upon a commercial footing as a going concern, and the apparatus required for such a purpose.

The chief objection to such undertakings is the heavy preliminary outlay that is usually incurred about the building, as the outlay is so heavy that anything like interest upon the capital invested in it, to say nothing of profits, is impossible for a considerable time. At Harleston this difficulty has been avoided by turning an old building to account for the purpose, so that the entire outlay upon the building, fittings, steam engine, and dairy utensils did not exceed £600, which is not an excessive amount upon a factory which ensures a ready market and prompt payment for all or any of the milk of the neighbouring farmers. It does more than this, for though the purchase of shares is quite optional, yet all who supply milk to the factory are invited to become shareholders if they become convinced that the business is likely to prove sound and profitable.

The butter made is of such uniform excellence that it has met with a ready sale at 1s. 4d. and 1s. 5d. per lb., the demand for it far exceeding the supply, so that there is no probability of too much milk being taken to the factory. There is a difficulty, however, and that is in the disposal of the separated milk, which is perfectly fresh and wholesome, and is offered for sale in Northampton at a nominal price, the object being not to make a profit, but rather to cover expenses upon this part of the business. Separated milk not sold has been used for pigs, and there can be no doubt that a porker trade might be built up in connection with the factory, which under good management should prove profitable. Provision would have to be made for breeding, as it would never answer to purchase pigs; home-bred pigs of the small white breed being altogether best, and there is always a ready market for them at weights ranging from 50 lbs. to 70 lbs. It is also obvious that a bacon factory might be added in due course, in which case a larger breed of pigs, such as middle whites, would be required of an average of about 300 lbs.

The separation of milk as it is brought to the dairy renders a large building unnecessary, and milk pans are dispensed with altogether. The new milk is weighed as it is received, the weight being printed by the weighing machine, by which the "churns" are elevated to an upper floor, where the milk is emptied into a galvanised cistern, whence it flows by a pipe down into a Victoria separator driven by a steam engine, which also drives the barrel churn and the Danish butter worker. The milk passes from the separator through another pipe and a refrigerator into another cistern, whence it is drawn for use or sale.

The factory is arranged in three parts, distinct from each other, yet so connected as to be easy of access and perfectly convenient. There are the engine house with only an outer entrance, so that

steam and dust are quite shut off from the other parts; the dairy, with separator, churn, and butter worker, and an upper floor for milk cisterns, and the milk room, with an outer door for the receipt and despatch of milk, so that traffic through the dairy is quite avoided. There are inner doors opening into the dairy and storeroom from the milk room. The fittings of the storeroom consist of light iron racks on the walls to hold small slates, each just large enough to contain 15 lbs. of butter, so it will be seen that the working plant is a very simple affair. A Victoria milk-testing machine is worthy of attention, from its simplicity and certainty. It consists of a horizontal disc with some grooves in the upper side sufficiently deep to contain a small bottle of milk in each one. The bottles lie in the slots with the corked ends pointing to the centre, they are kept in position by a metal cap fastened to the disc, which is made to revolve with such rapidity by the turning of a handle connected with multiplying wheels, that the cream is forced to the inner end of the bottles, and the quality of the milk is seen at a glance. The principle is that of centrifugal force acting upon the milk, very much as it does in the cream separator and the instantaneous butter maker.

WORK ON THE HOME FARM.

A full flow of milk is difficult to maintain, as the cows are withdrawn altogether from the pasture, and much care is requisite to ensure that it is perfectly sweet, wholesome, and free from all taint from the food and water given to the cows, from unclean hands of milkers, dirty utensils, or foul odours in or near cowhouse or dairy. Really good butter depends so very much upon all these points having sufficient attention that we cannot urge upon home farmers too often the importance of close personal attention to every detail of management. The cows are now snugly housed in comfortable yards with deep open lodges, a closed cowhouse for milking them in, and enough loose boxes for down calving and delicate cows. We always try to have at least one cow calving every month from the present time onwards into spring, as this imparts freshness to the milk as nothing else can do. The dietary consists of the best meadow hay in the racks, a gallon of bran, and a few Carrots at each milking, and a moderate allowance of Cabbages once daily. All lodges are cleaned out thoroughly every morning, after the milking, while the cows are at the hay-racks, as then they settle down quietly upon the fresh clean litter for some time.

Calves are all in snug quarters for winter, and especial care will be taken to prevent any tendency to a falling off in condition. There can be no doubt that a warm, yet well ventilated building, quite free from draughts, and kept thoroughly clean and well littered, is conducive both to the health and condition of calves. The food must be nourishing, yet not of an abnormally forcing nature, for many a fine "bunch" of lusty young beasts has been lost from black-leg caused by over-feeding. By all means induce calves to take solid food as early as possible, but milk and porridge are never out of place during the first twelve months of their existence. Some minced roots mixed with chaff and meal, and slightly salted, is good for them, and there can be no doubt that variety of food answers best. If closer attention were given to this important point we should not see calves and store beasts becoming so much trouble with itch towards spring as we so often do, and care should always be taken that they have access to rock salt.

METEOROLOGICAL OBSERVATIONS.

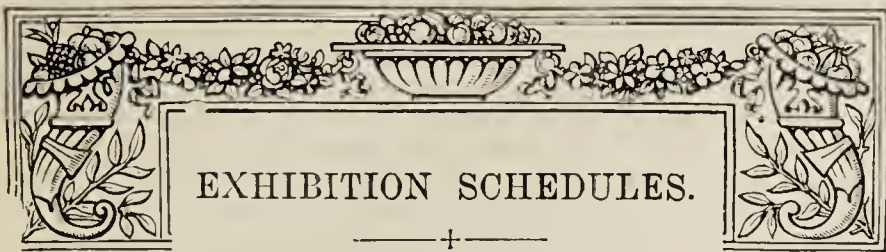
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain	
1890. November.		Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature.		
			Dry.	Wet.			Max.	Min.	In sun.		On grass
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday	16	30.292	48.9	47.6	S.E.	46.2	55.4	41.6	55.4	41.6	—
Monday	17	30.399	42.6	42.6	S.W.	46.4	52.8	40.8	65.6	31.1	—
Tuesday	18	30.414	52.1	50.3	S.W.	45.1	55.1	41.2	59.9	36.2	0.022
Wednesday ...	19	30.472	52.6	51.9	S.W.	47.3	55.8	50.9	57.4	44.8	—
Thursday	20	30.499	52.6	52.2	S.W.	43.4	58.4	51.3	64.6	43.3	—
Friday	21	30.249	50.3	48.3	S.W.	43.9	53.9	48.9	58.2	47.6	0.032
Saturday	22	30.179	44.9	42.7	W.	47.9	49.2	39.4	65.3	32.3	0.101
		30.356	49.1	47.9		47.3	54.1	45.6	60.9	39.6	0.153

REMARKS.

16th.—Overcast and gloomy morning; drizzle in afternoon; fair evening.
 17th.—Fog, rather dense till 10 A.M., then slight, and bright sunshine from 11.30 A.M. to 3.30 P.M.; foggy again in evening.
 18th.—Overcast and mild, with frequent drizzle.
 19th.—Mild and dull.
 20th.—Mild and dull, with occasional drizzle.
 21st.—Fair, but sunless morning; drizzle and showers from 4 to 8 P.M.; bright night.
 22nd.—Bright from sunrise to 11 A.M., then generally cloudy with spots of rain, and wet from 7 to 9 P.M.
 A mild damp week, but with high barometer and small rainfall.—G. J. SYMONS.



EXHIBITION SCHEDULES.

EVERY season's experience reveals imperfections in schedules of prizes for products invited for exhibition. The stipulations and conditions for the guidance of competitors and judges cannot be made too clear, and they should only be capable of one interpretation. At more than one Chrysanthemum show this year different views have been entertained in respect to what was or was not allowable under the schedule. This ought not to be. Committees of societies ought to have a clear conception of what they require exhibitors to do, and state this in terms which cannot be mistaken. It is not often that ambiguities arise in the cut bloom classes, nor with specimen plants; but they are too common in connection with groups arranged for effect. The object of these is presumably to afford the best and most tasteful examples of the association of plants, so as to produce the most pleasing and satisfying results. In the first place, the object in view cannot be attained by ill-grown examples with leafless stems, sickly leaves, and inferior blooms, for it is not in the power of man to so hide the defects of such plants that the group in its entirety is meritorious. In most schedules there are some such words as these—"Quality and effect to be the leading features in awarding the prizes." Obviously they must; but some, if not most, judges interpret the stipulation as meaning that quality of blooms is regarded as of primary importance by the Committee, and consequently taste in arrangement has been practically ignored, the chief awards having been made to a flat surface of handsome blooms, as if hoisted on sticks in boldly obtrusive and not over-clean pots, sometimes stacked on each other. There is no display of taste whatever in such arrangements, yet because the word "quality" stands first in the committee's instructions these conglomerations of pots, sticks, and stems, with "exhibition blooms" from 4 to 7 or 8 feet above them, are placed before groups of infinitely greater decorative value, simply because the blooms, though good, would not "count" so well, though the foliage and general taste displayed in the formation of the groups may be distinctly superior. It is a question for committees to consider whether the dual features "quality and effect" are not more confusing than otherwise to both judges and exhibitors, and whether the simple formula "the best and most effectively arranged group," or the "best group arranged for effect," of what is required, would not be better for all concerned. A group cannot present a good effect if the plants bear inferior or stale blooms, nor can it if pots, stems, and stakes are as conspicuous as flowers.

Competition in group classes has become so keen that perhaps more exhibitors than the public are aware of exercise considerable latitude in their arrangements. Some plants are taken out of their pots and some are laid on their sides, if thereby the general "effect" is enhanced. They know that the same methods are resorted to by the leading floral decorators in the embellishment of halls and mansions on festive occasions, and conclude they are justified in following the example. The consequence of this is that disquietude is caused and protests talked about if not formally lodged in time when prizes are adjudged to those groups. If it is the desire of authorities of shows that the plants of which groups are composed be shown in the pots in which they are grown it is easy to say so, then if exhibitors transgress they do so at their peril; otherwise

"custom" is in their favour and may give to them the benefit of any doubt which exists in the absence of explicit stipulations.

Another question now arises, and an important one in the judging of groups of plants arranged for effect. It can scarcely be expected that the adjudicators can disarrange the groups to search for possible contraventions. If they did this there would be, and not unnaturally, such an outcry from exhibitors that would very soon put an end to that method of exhibiting; while, without breaking into the groups on the first day, it is impossible that certain peculiarities can be discovered. This is particularly the case when plants have been cut down and their stems pressed in wet soil, or when flowers have been affixed where they never grew. That some exhibitors think it right to do such evidently wrong things is indisputable; but except there is a spy in the camp who is cognisant of the circumstances and reveals them, prizes may be adjudged to those groups, because the blooms are as upright and the foliage as fresh at the moment of inspection as if they were growing, but before the day is over, or the next day, the blooms hang down their heads as if ashamed of their position, and the leaves seem as if endeavouring to shrink into the pots below. The stipulated time for admitting protests has passed, yet the prizes have been awarded and exposed to the public, and officials are in a dilemma.

What is the remedy for this unfortunate state of things? It must be practicable to be useful. It is not practicable for judges to spoil groups in searching for what may or may not exist in them. They assume, in the absence of apparent discrepancies, that they are in accordance with the schedule, and determine their relative merits as presented at the time, not as they will appear the next day. Seeing, then, that it may not be till some time after the judging that the exact state of things can be ascertained, it seems to us that the best way in which officials of shows can protect both themselves and exhibitors who conform with the schedule is to insert a proviso to the effect that if anything is discovered before the close of the show in contravention with the stipulations, that the prizes will be withheld. This would prevent unfair liberties being taken, or if it did not, the penalty imposed on the first delinquent would have the desired effect. But such a proviso should not go beyond the groups, as the judges should incur the full responsibility in adjudicating on all that is fully presented to them in the ordinary exercise of their duties, otherwise confusion would soon rule supreme throughout the classes.

Now we turn to the exhibition of fruit, and in connection therewith all schedules are not so clear as they should be. In September next a great International Exhibition is to be held by the Royal Caledonian Horticultural Society in Edinburgh. "Great," indeed, it is sure to be, and good, as we know from past experience of the work of the Society and the indications in the schedule before us. This has not been sent officially, but by a correspondent who is in doubt on certain of the stipulations, and we are asked to examine those classes and state our views thereon.

In section I., which is termed class, good prizes are offered for Pine Apples, and handsome amounts for Grapes; but on turning to section II. (Grapes) we find that competitors in the preceding section are excluded. This we can quite understand as applied to Grapes, but why exhibitors of Pines in one section should be debarred from showing Grapes in the other is not so clear. The exclusion is perhaps not intended, and if not it would be as easy to make the matter clear as to leave it in doubt.

Section III., which our correspondent describes as perhaps the most important in the schedule, makes provision for collections of fruit containing (a) twelve dishes of any sorts, (b) twelve dishes excluding Pines and Bananas, (c) twelve dishes exclusive of Grapes and Pines, and not more than two dishes of one variety. "Why two dishes of one variety?" we are asked, but are not able to answer the question, and refer inquirers to the Committee. There

are three other classes in this section, the aggregate value of the prizes amounting to upwards of £113, truly a liberal provision.

Referring to the twelve dishes of fruit grown in an orchard house, our correspondent regards the conditions of this prize as correctly drawn, but the collection of eighteen dishes of hardy fruit, not more than two dishes distinct varieties of each kind, grown in the open air in Scotland, he regards as vague, and thinks it should be made clear whether such fruits as Grapes, Figs, Peaches, Nectarines, and Apricots, that require the protection of a wall or other structure to bring them to perfection in most parts of Great Britain and Ireland, are admissible as hardy fruits. The same remarks apply to the eighteen dishes of hardy fruit grown in the open air in England. As there is a wide difference of opinion on this point among some leading exhibitors it seems desirable that the conditions should be made very explicit.

Handsome prizes are offered for single dishes of Figs, Peaches, Nectarines, Apricots, and the like, but class 67 for twelve Plums, three sorts, four of each, together with classes 69 and 70, appear to our correspondent as "somewhat strangely drawn." Class 67 consists of three dishes, four of each sort, the prizes offered being £2, £1, and 10s., whilst in class 69 the collection of Plums to consist of six each of the following:—Jefferson, Coe's Golden Drop, Lawson's Golden Gage, Kirke's Seedling (?), Early Prolific, and Transparent Gage, the same prizes are only offered. We offer no opinion on this, but may remark that Kirke's Seedling is a misnomer, for Kirke did not raise the Plum referred to. It is also pointed out to us that it seems hard on exhibitors to compel them to include such varieties as Coe's Golden Drop and Early Prolific in a collection, on the ground that it is almost impossible to have these two varieties in perfection together when grown out of doors, one being a July and the other a September and October Plum.

Numerous varieties of Pears are invited, amongst others Winter Nelis, Glou Morceau, Easter Beurré, and Beurré Rance. As these varieties must be grown out of doors, it is impossible to have them much more than half developed by the second week in September, and why not invite such fine varieties of autumn Pears as Clapp's Favourite, Pitmaston Duchess, and Doyenné du Comice? The same remarks apply to Apples Court of Wick, Duke of Devonshire, Wellington, and Northern Greening being invited, and which will not be at maturity until months after the show, to the exclusion of other varieties that are in season at the time. Excellent prizes are offered for plants, cut flowers, and vegetables.

Some of the points referred to in the schedule appear to require some reconsideration with the object of making it clear to exhibitors, and enabling them to do their best in making the Exhibition what we hope it will be—a brilliant success.

KEEPING GRAPES.

THE practice of keeping back Vines in spring and employing fires freely during October to ripen their fruit is nearly obsolete, and rightly so, because it is the reverse of economical, and the fruit keeps badly afterwards. Some late varieties, however, need to be started into growth earlier than others. For instance, Gros Colman, which takes a long season to bring it to perfection. Perhaps the best flavoured Gros Colman I have ever tasted was ripened in the temperature of a Muscat house. The Muscat of Alexandria was used as a stock, but in spite of this the variety appears to finish better under comparatively cool treatment. If the crop is too heavy, and hurried from the time the Grapes commence colouring, they are seldom black, but if the crop is moderate, and abundance of air is admitted day and night, there is no difficulty in colouring them. It would be wise to start Gros Colman a month earlier than is necessary for Lady Downe's and Alicante.

I am not in favour of having fruit ripe too soon that has to be kept some months on the Vines and in bottles. If thoroughly ripened by the end of September under cool airy treatment the fruit will keep well, but I would prefer having fruit ripe by the end of August rather than in October, and it would certainly keep better. This is not the only advantage gained by assisting them in spring, instead of when the days are short and the sun has but little power to solidify the wood. This is accomplished by

starting the Vines early enough instead of having to ripen the wood by the unnatural process when light and natural heat are at a discount.

After the fruit is ripe the treatment the Vines receive is often the reverse of what it should be. Instead of trying to keep the temperature at 55° to 60° as is too frequently done, until the Grapes are cut, say at the close of the year, the temperature should be gradually decreased until the Vines can have cool treatment. More Grapes decay through the use of fire heat after they are ripe than is the case if it is not used. Fire heat tends largely to shrivel the berries and dry the borders, so that recourse to watering is necessary, which by the opposite treatment would not be required. If one Grape more than another dislikes fire heat after it is ripe it is Alnwick Seedling. If the structure in which it is grown is freely ventilated and kept cool the Grapes will hang in good condition for six weeks or two months longer than where the orthodox system of firing is practised. Closed ventilators and fire heat create atmospheric conditions that are highly favourable to decay in the berries. It should never be employed after the fruit is ripe when the ventilators are closed, except to keep out frost, and even then it is preferable to leave the ventilators open a little at the base and top, and have recourse to extra warmth in the pipes.

The only advantage fire heat affords in the keeping of Grapes is to expel damp, and this as far as possible should be used early in the day when the ventilators can be opened. Any moisture that may have become deposited on the berries through a low night temperature will do no harm, provided it is evaporated early in the day without fail.

Perhaps the most critical period for keeping Grapes is from the time the foliage commences fading until it falls. The period when this takes place varies considerably according to the time the fruit is ripe and the condition of the roots. Vines in healthy vigorous condition, with their roots in outside borders, and the fruit ripe by the end of September, will retain their foliage until near the close of the year, while under many other conditions the foliage will be off before the end of November. If the Grapes are preserved in good condition until the foliage has fallen naturally, there need be no difficulty in keeping them afterwards. A cool dry room should be selected for them after they are cut from the Vines. It is important that the room be liberally ventilated, for the whole secret of keeping Grapes in good condition depends upon a free circulation of air. If a uniform temperature can be maintained, that is, if the room is so situated that the temperature varies little, all the better. But the temperature had better vary considerably by the influence of external conditions than be kept uniform by fire heat. It is not only necessary to employ fire heat judiciously while the fruit is hanging on the Vines but also after they are cut and the stems placed in bottles of water.

The bottles to be used should, as far as practicable, be of clear glass, so that it can be seen at a glance whether the end of the stem is in the water or not. With many of the stems of the bunches this care is not necessary, but with others the case is different, and they need examining frequently. The best plan is to hang all with short stems together, so that they can be attended to whenever they need it. It is important to keep the stem well in the water. The bottles should slope gently so that the bunches hang perfectly clear. If the bunches are heavy shouldered do not allow the shoulders to press on the remaining portion of the bunch, but suspend them the same as when growing upon the Vines. If the berries press upon each other they are certain to decay however carefully they may be attended to. When they are in the bottles the bunches should be looked over once a week, so that any berries which decay do not remain to affect those surrounding them. Many bunches are spoiled in appearance by inattention to details of this nature. It is unnecessary to seal the ends of the shoots or even to place charcoal in the water. The necks of the bottles need not be stopped. The room should be cool and ventilated liberally. If fire heat is used the water from the bottles is evaporated, and causes a moist atmosphere that quickly ends in the destruction of the berries. Close the door and windows, light a fire, and moisture will soon be expelled when the door is opened. This state of things is avoided by using no heat, except the doors and windows can be thrown open at the same time. As long as frost can be kept out of the room we strongly urge the use of no artificial heat. Those who try this plan will find that their fruit will keep much better than is the case when used more or less frequently. Rather than employ fire heat prepare straw shutters for blocking up the windows during severe weather. If these are thick and kept dry they prevent the temperature of the room falling considerably; they should be removed daily and dried unless the weather is of such a nature that it is necessary to keep them up.

No room is suitable for this purpose in which a thorough circula-

tion of air cannot be maintained. For years we have kept Grapes well in a room behind a north wall with a door and window to the north, the circulation of air being maintained by the fireplace in the south-west corner. Years ago, when we kept a steady fire during dull bad weather, the Grapes kept badly. When we discontinued its use and threw open the door and window whenever the weather was anything like favourable we found no difficulty.

The closing weeks of August and September were all that Grape growers could desire, and the fruit should have been well ripened under the most favourable conditions, and therefore may be expected to keep well after being bottled if ordinary care is exercised.—WM. BARDNEY.

RENOVATING ORCHARDS.

[A Paper by Mr. JOHN WRIGHT, read on behalf of the British Fruit Growers' Association, at a meeting of the Falmouth Horticultural Society, November 12th, 1899.]

(Continued from page 440.)

SEVERAL instances of success resulting from grafting profitless trees could be given, but two will suffice. Mr. Robert Garrod of Ipswich planted a number of fruit trees some years ago in good soil. In the course of time some of them instead of growing and bearing commenced cankering, and were soon worthless. By simply cutting back the branches of these, and grafting them with varieties that flourished, he made the useless trees useful, and they have since borne profitable crops, and the stems are free from canker. In this case there was sufficient nutriment in the soil, but the paralysed roots of the stunted trees could not imbibe it, but the free growth of the grafts caused an extension of root action, and sufficient nutriment was appropriated for the continuance of healthy growth and the support of good crops of fine fruit. I am at liberty to mention Mr. Garrod's name, because it has appeared in the public press, but I am not free to mention the name of the owner of some Apple trees in inferior varieties and of stunted growth. They did not afford him £5 worth of fruit a year. He was advised to cut them down and insert a number of scions on each of the hardy and strong growing Bramley's Seedling. They commenced bearing in three years, and the seventh after grafting yielded considerably more than £100 worth of fruit. Nothing was done to the roots. How, then, is the improvement to be accounted for? In this way. The stunted trees had roots, but they were of necessity weak, and did not extend far from the stems. They had impoverished the ground within the small occupied radius, but the strong variety established on the weak imparted strength to the roots, and these pushed beyond the impoverished radius into fresh feeding ground, and practically virgin soil. When endeavour is made to improve fruit trees by grafting, much stronger growing varieties should be chosen than those which are cut down for the reception of the scions, because of the increased power that is thus imparted to the roots, for the character of the roots is changed by grafting as certainly as are the tops of the trees.

The process of grafting cannot be made clear to the uninitiated without illustrations, but these, with concise details, are given in the essay which I wrote for the Fruiterers' Company, and which can be had by post for 1s. 3d. from 171, Fleet Street, London. I have the less hesitation in mentioning this, as I derive no advantage whatever from its sale.

I wish to make it quite clear that when old trees are renovated by grafting alone, it is because there is soil that can be reached by stronger roots which has not been deprived of its fertility. Where the whole surrounding ground is impoverished, grafting is not of much permanent value. Strong growing and rooting sorts will live where the weaker fail, just as active animals with good teeth have an advantage over others that are afflicted with the foot-and-mouth disease in getting the best share of the pasture; but where the food is scant it is soon devoured. And thus it is that we see grafted trees grow very well for a few years only, then collapse. They succumb because they have emptied the larder, for the earth is the great larder of Nature, and it is the duty of cultivators to keep it replenished with the food that is needed by the crops. The soil itself is not food, but only the medium for containing it, as a sponge contains water. We use the water and leave the sponge, and fruit trees draw the food out of the earth and leave the soil. There are not many exhausted fruit trees that cannot be improved by enriching the soil or placing in it the fruit-growing constituents which have been drawn out, and especially when the trees are also judiciously pruned and cleaned from insects, moss, and other parasitic encrustations.

The quickest method of storing food in the earth for immediate appropriation by trees is in the form of liquid manure, such as the drainage from stables and manure heaps, or the contents of cesspools—sewage. After much experience I am justified in recommending the application of liquid manure to debilitated fruit trees

in the winter under certain prescribed conditions. It may be applied usefully in the summer also if the soil is moist, not on the surface only but 3 feet or more below it, otherwise a minimum of benefit will accrue from a maximum outlay in material and labour. On this subject I cannot do better than reproduce what I wrote in the *Journal of Horticulture* a little more than a year ago. Those who have read it I ask to read it again and find all the fault they can with it. They had better do this before making full trials of the method indicated, because they will not have such a good chance afterwards. Here is the article that was founded on long practice. The simple plan advocated has since been tried by others and not found wanting:—

"Some time ago a correspondent said he failed to see how liquid manure given to fruit trees in the winter could be of any benefit, as the roots were then in a dormant state. In the first place they are not in a dormant state after the leaves fall, though they do not imbibe nutriment from the soil to anything like the same extent as in summer; and in the second place they do not imbibe what they need either in summer or at any other time when the food for which they are hungering and thirsting is not in the soil. That is the condition of thousands of trees in summer and winter. They have been planted for years or generations, and manure may or may not have been placed round their stems from time to time. Be that as it may, the roots have deprived the soil of all that was good for the trees, and gone further and deeper in search of more—seeking, but finding not that which is necessary for their sustenance. They have lived but not prospered, and never can prosper until the impoverished food store (the earth) is replenished—supplied with matter which is essential to their health.

"Unquestionably this may be given with great advantage in summer if obstacles do not forbid its application then, and in no other way can it be so quickly effective as in a liquid state. At no period are the roots of fruit trees of all kinds so active as early in September, and at no period can so much nutriment be imbibed from the soil in a given time when the earth is in a fit state for its reception. It is not in a fit state when it is dry, and I have no hesitation in saying that the best of liquid manure that can be procured does immeasurably less good applied in summer, when the soil, in which the roots are situated or trying to move, is dry, than in winter, when it is moist—not waterlogged, but moist enough for absorption, while at the same time permitting of free percolation, for where water passes through the soil air follows, and there can then be no stagnation. The earth, then, to be in the best condition for the reception of liquid manure, must be moist, yet sufficiently drained naturally or artificially.

"During the summer months the earth may appear moist, and is moist, it may be, to a foot or so in depth, even under and near long planted, large, yet enfeebled trees; but below the moist layer in which there are few or no roots, we find on digging that the earth is as dry as powder, and it is in this dry under stratum that the chief of the roots are established. This should be thoroughly moistened with clear water, then, and not till then, following with liquid manure. But it is often most difficult, and may be impracticable, to make the impoverished soil moist during the summer season of the year, in which the roots of starving trees are established; and beyond question the autumn rains and winter snows do the important work more effectively and cost nothing. Then is the time to empty cesspools and pour the contents into the ground; of course, when the surface is moderately dry. At that season of the year the liquid can be given of twice the strength it would be safe to apply it when the roots are in an active state; in fact, it is not easy, I suspect, to give it too strong in winter. Some of the virtues may pass away, but the bulk will be retained by the moist soil, and be imbibed by the roots to the certain benefit of the trees.

"I have used thousands of gallons of the contents of cesspools that could only be emptied in winter, with the most striking benefit to all kinds of fruit trees and bushes which only needed sustenance to render them bearers of excellent fruit; as I gained courage from experience the liquid was less and less diluted, and the stronger it was the more marked was the effect beneficially on the trees. If the soil is moist in summer liquid manure may be given with advantage to fruit trees that obviously need support; but the very strong may need to be somewhat diluted. It is worse than useless applying it to dry soil, as it drains down, leaving little of its virtues behind, and may in passing do injury to some of the roots; but apart from that the practice is wasteful, and therefore should be avoided.

"When travelling in Lincolnshire in August last year I had the pleasure of calling on a clergyman, who is also an ardent gardener. I had known the old espalier and other trees in his garden for years. Many of them had the appearance of being worn out, and most persons of an improving turn of mind, with the means of carrying out their ideas, would have destroyed the old trees and

planted young. Some were planted, but the old were retained and nourished. I was somewhat astonished to see the change they had undergone since the previous year, thick deep green leaves in place of the pale and thin; stout short jointed, well-fed wood in place of the weak; large fruit in place of the small, clean and rosy in place of the speckled and sickly hued. This rapid renovation had been effected by liquid manure given strong and plentifully in the winter.

"I had exactly similar experience in years gone by, and in the same village. Whether the vicar came to hear of this I know not, or whether he remembered something he had read on the subject, or whether it was a question of wasting the sewage or not, and so he ventured to try it on the old trees, not minding much if he killed them, I am not able to say, but the fact remains he did pour the strong stuff into the ground when it was naturally wet in winter and the trees leafless, then when the spring came and the summer advanced the sturdy shoots and thick dark leaves, the bold buds, and good fruit told plainly that the food in solution given in winter when the trees were resting was not lost, but retained and appropriated. In no other way could the enfeebled trees have been improved so quickly, decidedly, and cheaply.

"It is nearly thirty years since some cesspools on the premises of a gentleman could only be emptied in the winter. The contents were applied to old trees in an orchard, completely saturating the ground, and there was no mistaking the effect of the application. It was then used in the garden, being given to trees of various kinds near the walls and in the open that appeared to need extra support, also to Gooseberries, Currants, Strawberry beds, and Raspberry plantations, with the most satisfactory results; indeed, for seven years they had no manure beyond the sewage, and this was only given in winter. The owner of the trees and bushes, and all else who knew them, were satisfied that they became much more healthy and grew far better crops of fruit after being thus treated than they had ever done before, and canker wounds healed freely in some apparently worn out Apple trees that were invigorated in the manner described. To be effectual the application must be thorough, surface dribblings being of little use."

It may be thought, and is thought by some cultivators, that liquid manure applied in winter passes through the soil into the drains. This is not so when the soil is moist and not too sandy for fruit trees. The liquid is not lost, but filtered, that which is least wanted, then (almost pure water), passing away, that which is most wanted—the virtues of the liquid—being retained for the support of the trees. This anyone can prove by experimenting with a large flower potful of moderately firm moist soil.

In order to aid the penetration of the liquid quite down to the roots of trees holes made with a crowbar are useful, particularly on sloping ground, filling them over and over again. These food receptacles should not be close to the stem only, for the most active feeding roots are at a distance from it about equal to the spread of the branches. The deeper and wider and more numerous these conduits are the better, especially when they are afterwards filled, as they should be, with a rich compost rammed firmly. A mixture of loam, wood ashes, and leaf mould in equal parts, well incorporating with each bushel 3 or 4 lbs. of superphosphate of lime, used in the manner suggested will soon be taken possession of by a mass of fibrous roots, and the trees will be improved accordingly. I have seen some striking results follow that practice in the renovation of both fruit and ornamental trees on grass.

(To be continued.)

AURICULAS.

ONE peculiarity of Auriculas is that they are interesting all the year round. At present they should be in the quarters where they are to flower next April. Growers who have only frames should see that they are thoroughly watertight, for a drip in the heart of a plant is fatal. During heavy rains the sashes should be kept close, enough ventilation being provided for by openings in the sides, or by having the frame raised some inches from the ground. In Scotland most of the growers have now houses specially erected for their Auriculas, and thus the plants can be under their observation during even the storms of winter. This is undoubtedly the best way of keeping the plants safe, for with frames much damage may be done before it can be discovered, as for many weeks sometimes they cannot be opened. Even with a house and all proper attention it is found that some plants will go wrong, and occasionally a loss has to be borne. The door of the Auricula house should be of wire netting, as close in the mesh as to exclude birds, and the upper half should be made to hold a glass sash, removeable at pleasure, which during winter protects the plants from draughts and driving rains. The plants require little water from this time to the commencement of growth about the beginning of

February, but they must never be allowed to become dust dry. A practised eye knows by the look of the soil where water is needed. The plants have gone to rest, and the chief attention they require is keeping them clear of green fly and yellow leaves. In a collection of any size, yellow leaves will be found every day, and they should at once be removed. Where the plants can be carefully observed, as in a house, every one is a study. Some will soon assume the appearance of a close cone like a pencil point; others maintain more or less expansion in their foliage all the time they are at rest, and some stems appear longer than others, owing to the thickness of the base of the leaf, which leaves a larger space empty when it is taken off.

Every Auricula grower knows that there are some plants that will not grow or bloom satisfactorily with him, whatever they may do with others. In my own experience I have never been able to make anything of Douglas's Conservative. Every season it has broken up into a number of small plants, and I have never had a plant of any size to show its real merits. The best plant and the best bloom of it I saw with Mr. B. Simonite at Sheffield the year it came out. The experience of some of the Scotch growers is the same as mine. There must be something inherently delicate in Campbell's Duke of Argyle, judging from its scarcity. This season I had a fine plant and a good bloom, but shortly after being repotted the stem above and below the soil decayed simultaneously, to my great grief, as there is little chance of replacing it. Simonite's Mrs. Douglas is another which breaks up with me. It is a desirable variety owing to its colour, which makes it conspicuous in a collection. Kay's Alexander Meiklejohn, as good a grey-edge as we have, is not a satisfactory grower. The leaves do not expand properly, and I have seldom seen it without a stunted look, and with the foliage "nirly," as the Scotch phrase it. With me it is not a ready breeder. It is the opinion of my Auricula-growing friends that Reid's Acme is losing strength, and is not so robust a grower as it used to be. I did not observe any difference in my plants last year, but now that my attention has been called to the matter I will watch Acme in future. On the other hand, it is pleasing to see at the proper season the robust and sturdy growth of Lightbody's Sir John Moore, Woodhead's Mrs. Dodwell and George Rudd, Campbell's Lord of Lorne, Turner's Colonel Champneys, Downing's Catherine, Horner's Heroine, and others. My excuse for mentioning these things is that points in the experience of others are always interesting and useful. — JOHN MORRIS, Dundee.

PEARS ON WALLS.

I GIVE a select list of varieties of Pears, as grown at Kenward. I will speak of the south wall first: "Winter Nelis, Pitmaston Duchess, Williams' Bon Chrétien, Marie Louise, Glou Morceau, Doyenné Boussoch, Beurré Rance, Brown Beurré, Beurré Diel, Beurré Superfin, Chaumontel. On west walls: Gansel's Bergamot, Jargonelle, Marie Louise, Pitmaston Duchess, Williams' Bon Chrétien, Van Mons Léon Leclerc, Beurré Superfin, Winter Nelis. On east walls: Flemish Beauty, Madame Treyve, Doyenné Boussoch, Catillac, Bellissime d'Hiver, Uvedale's St. Germain, Williams' Bon Chrétien. On north walls: Swan's Egg, Marie Louise, Uvedale's St. Germain, Jargonelle.

The west wall I consider the best for Pears, but Glou Morceau does very well on the south wall, also Marie Louise, Chaumontel, Beurré Rance, Doyenné Boussoch, and Doyenné du Comice. Many more could be added. Winter Nelis does best with us on the south wall, double grafted upon Brown Beurré, or properly speaking, budded. I find Pitmaston Duchess does not set a sufficient number of fruits for a half crop. I am about to double work this upon Winter Nelis, and Winter Nelis upon Pitmaston Duchess.

The natural soil at Kenward is good for Pears, when the roots are prevented passing into the subsoil, which is more or less clay. In planting I use tiles, to prevent the roots getting into the subsoil, placing the tiles at the bottom of the hole made for planting, one tile overlapping the other, as on a building. This I find prevents coarse roots, and further, the roots are under the entire management of the cultivator. I have found all the fruit trees planted in this way free from strong breastwood in summer, and the wood ripens much better in autumn. All our fruit trees except Apples are planted upon clay tiles, and have been for many years, whether against walls or in the open quarters, and I have no cause to alter my system of planting upon tiles. Of course if very dry weather occurs the fruit trees are watered occasionally, according to the crop upon the trees. We have many other varieties of Pears in the open quarters, as pyramids and bush trees. Remarks upon these I must reserve for a future paper.

I need not say much about insects, but one or two may be mentioned. The slug worm is a small, black, slimy caterpillar, that occasionally does considerable mischief to the foliage of the Pear

tree by consuming the parenchyma of the leaves. The most effectual remedy is dusting with tobacco powder over the insects; this will soon make them roll off and die. Green caterpillars are very troublesome; these should be hand-picked, and also the maggots in the spring shoots. The worst pests I have to deal with are the wasps. These do great damage to our wall and other fruits. We find their nests if possible, and destroy them, but it is difficult to find every nest, otherwise we should soon cease to be troubled with them. We do our part, having taken and destroyed 233 queen wasps in the spring, and 113 nests up to the 27th of August, 1890; all these within flying distance of the fruit garden. The largest nest taken was 38 inches round, and contained thousands of live wasps, besides maggots just ready to hatch. The wasp is most destructive to ripe fruit, but they also attack green fruit. Last season we had a quantity of green Pears damaged by the wasp, even such hard Pears as Beurré Rance, upon a south wall, was much damaged by these insects, as late in the season as October. We destroyed over eighty nests last year, and I was in hopes we had thinned them for another year. My belief is that a very severe winter is Nature's way of keeping down all insects. A stranger walking round our fruit garden would not think we had troubled to take a nest. I have not mentioned gathering and storing the Pear, for most cultivators use the conveniences at hand, and I might leave this question also for a future paper.—J. SMITH, *Yalding*.

CATERPILLARS AND FRUIT TREES, 1890.

FROM some districts of the midlands and the north of England serious complaints reached us last summer of the mischief caterpillars had caused to fruit trees, notably the caterpillar of the winter moth (*Cheimatobia brumata*), and in some places that of the mottled umber (*Hybernia defoliaria*) was nearly as abundant. Other destructive species often accompanied these two, but in less numbers generally. Taking England as a whole, however, I think we shall find that, considering the prevalence of the plague of caterpillars in 1889, the following season did not show anything like the abundance of them that some growers feared. True, there was a yield of fruit far below the average, but this could hardly be charged upon caterpillars, large or small, certainly not in our district of North Kent. Most of the fruit growers I know attribute the scarcity of fruit to the cold nights and rough winds that occurred just about the time of blossoming; and with regard to the Plum, the knowing ones foretold that a bad year would come after the four or five years, when the yield in most kinds was good, or even abundant.

Still, we had our caterpillars, quite as numerous as anybody desired, if not more so, and to prevent their progeny troubling us next year various precautions must be taken. The discovery that by the aid of the male insects the females of the winter moth can manage to get above an adhesive band or smear placed round the trees about the end of the year proves that what was supposed to be the best method of prevention cannot be absolutely depended upon. Yet for all that, this should always be done where the species has shown itself abundant in the summer, care being taken to lay on this composition before the emergence of moths, for though the period varies in different localities, if left till December is much advanced it is likely to be too late. This circlet also serves as an obstacle to the upward progress of the wingless females of the mottled umber, and to any other winter moth of similar habit. Some alarm has been occasioned by the mottled umber caterpillar, which has been looked upon as a new foe to fruit trees. This is a somewhat conspicuous one, larger than that of the winter moth, red-brown on the back, the sides yellow, grey, and white. Owing to its not spinning a web it can be easily shaken from the trees. I do not think it is more abundant than it used to be, but instead of feeding chiefly on the Elm, Lime, and other timber trees, it appears to have visited our orchards of late; but in Kent the species occurs only sparingly, though plentiful in adjacent counties. It must be borne in mind that this insect emerges earlier than the winter moth, and the eggs in an average year would be laid by the middle of November. The young caterpillars hatch out some time in April, as do those of the winter moth and allied species. Evidently during last spring many thousands of all these were destroyed by keen winds that followed a sudden burst of warmth, by which they had been brought into life too rapidly for themselves, but quite to the advantage of the horticulturist.

It is a matter of easy observation that the caterpillars which get on best in any ungenial spring are either those able to protect themselves by silken webs, or those naturally provided with a coating of hairs. Some have both safeguards, the brown tail for instance (*Liparis chrysorrhæa*), a caterpillar regarded in the reign of George III. as the leading foe of fruit trees, but which is now

less common, and found usually on the Hawthorn and Sloe. So, too, is it with the lackey (*Bombyx neustria*), which I never remember before so abundant on the Apple. Through June and July the caterpillars were to be noticed wandering about in all directions near gardens and orchards, for they are soon dislodged from the boughs on which they feed, and move hither and thither anxiously till they can regain their position. It is not at that season they do most harm to the trees, but in May, while the foliage is young. At the beginning of that month the new brood appears from the eggs laid in August, and they form colonies varying in number from fifty to thrice as many, each party constructing a general web, under which they shelter themselves in rainy weather, also after dark. During the day they scatter, going in little parties, sometimes several feet off, but seldom failing to reach their home at the time needful. In France for many years it has been customary to take precautions against the spread of the species by obliging owners of orchards to cut off and burn the twigs or branches having their webs. Hitherto it has not seemed needful in England, but may be if it continues to increase as it has of late. Through the winter months search should be made for the eggs, placed in circlets about the shoots; they can be easily removed without cutting the wood. Some of our country folks have a superstitious dislike of the adult caterpillar, perhaps because its head, with its two eye-like spots, looks peculiar, especially when it sways from side to side, in doubt as to which way it shall crawl. The lackey is rarely found on the Pear or Plum.

The small ermine moth (*Yponomeuta padella*) was noticeable upon both Apple and Plum in the summer of this year, but it was not particularly abundant. I think it now and then infests the Cherry, or if not, there is another species of the family does, alike in its web-weaving ways. The webs made by the caterpillars of this ermine are even more annoying than those of the lackey moth, and their secretions appear to have a poisonous effect on the trees in addition to the injury done to the leaves and buds. Sometimes also they are to be caught in the act of gnawing the epidermis of the twigs. It is upon the twigs the patches of eggs are laid, covered by the mothers with a smooth gum, which protects them from the weather, and also unfortunately makes them difficult to detect. Now is the time to look for these and remove them, but the gardener will probably be surprised to find under the gummy coating, not eggs; there will be moving objects, in fact tiny caterpillars. It is a curious circumstance that they hatch in the autumn, and remain without eating till the first warm days of spring, when they start off in search of food, and begin active life by burying themselves under the surface of the swelling buds solitarily, or it may be in twos or threes. Having grown to some extent they next unite to construct webs, which are their abodes till they come out as moths. These are tolerably conspicuous in July, though not large, owing to their tints of black and white. They are sluggish, therefore it is easy to capture them by spreading under the trees nets or cloths, into which they may be shaken. Some of our Pear trees in North Kent had their buds damaged by the caterpillars of *Tortrix angustiorana*, well known as an enemy of the Peach and Apricot. But still more marked injury to the Pear, Plum, and Cherry this year was caused by the hosts of aphides that appeared upon the trees in May and June, the species being chiefly *A. Mali*, *Pruni*, and *Mahaleb*. In many instances the growers found it impossible to grapple with the pest, and some trees became some sickly that they had to be cut down. During the autumn the slug-worms of the *Selandria* group were numerous on some Pear and Cherry trees.—ENTOMOLOGIST.

At a recent meeting at Astwood Bank, Worcestershire, Mr. J. Hiam referred to the winter moth, the life history of which he explained. He exhibited live specimens of the male and female moth. He found that the egg laying began in the middle of October, and was now at its height. The first male moth he saw on the 22nd October and the first female four days later.

He judged from the state of his trees that the visitation of winter moths was as severe this autumn as ever, or rather more so. He found, however, that efforts to cope with the pest were becoming far more general; it was a rare thing now to see a tree without grease bands, whereas formerly it was a rare thing to see the trees with them. Still he found there was a great deal of prejudice to encounter. From his observations he concluded that fruit growers would have to be ready with the Paris green and London purple next spring. Mr. Hiam's bottles were covered with paper perforated with minute holes. Through these holes the female moths had thrust many of their eggs, showing in what minute crevices it was the habit of the moth to lay her eggs in on the trees. He had also some true specimens of the grub, which are a mere speck when first hatched. This little creature commences at once to eat at the centre of the bud, and does the damage weeks before its presence is noted. He produced a grease band from one

of his trees, and showed that not a moth had passed beyond it, as the grease was good. Mr. Hiam thought that many failures result from the use of bad grease, and strongly advocates its being placed on bands of greased paper. He considered it would not act effectually if placed on the bark, and in proof of this referred to his band. This was made to cover two-thirds of the circumference of a particular tree, the other third being greased on the tree. On the grease on the paper he took fifty-three male and eighty-five female moths, and on the grease on the tree only two males and two females. This clearly showed that the bark absorbed the grease and rendered it comparatively useless. He next explained the beneficial effects of syringing with Paris green and London purple, but counselled great care in their use.

The syringing not only had a beneficial effect on the crops of the year, but sensibly mitigated the attack of the pests in the following season, as the caterpillars being killed did not go down to the earth to come up in the autumn as moths. In proof of this he gave statistics of the moths found on trees syringed and not syringed. No. 1 was a standard orchard Apple tree, 20 inches in circumference, sprayed with Paris green after blooming. On Saturday week he found on the grease band of that tree fourteen male and three female moths. No. 2 was an Apple tree, 36 inches in circumference, and was syringed. From that he took twenty-one male and three female moths. No. 3 was 21 inches, and on the band were twenty-two males and four females. No. 4 was 30 inches, and had eight males and six females. The total number of moths caught on the greased bands of the four trees on Saturday week was sixty-five males and sixteen females. No. 5 tree was not sprayed with Paris green. It was 57 inches in circumference. On the grease band were 103 males and 138 females. No. 6, 34 inches, not syringed, eighty-five males, eighty-two females. No. 7 was the tree which was greased partly on the bark and partly on paper, so that all the moths were not caught. About a fourth of the tree was syringed. On it were fifty-five males and eighty-seven females. The total number of moths on the trees not sprayed with Paris green was 243 males and 307 females. He calculated roughly that the moths captured would represent 3000 caterpillars on the four syringed trees, and 60,000 on the other three.—(*Evesham Standard*.)

SEASONABLE NOTES ON VINES.

THE following hints will probably be useful to beginners in Grape culture who are expected to have a supply of fruit at different periods of the year. The earliest Vines were started in November. Whether in pots or planted out, they will need to have the temperature increased to 60° at night in mild weather, 55° in severe weather, gradually increasing it so as to have it 60° at night when the Vines are in leaf, 65° by day in severe weather, and 70° to 75° in mild weather with moderate ventilation. The evaporation troughs need not be charged with liquid manure if there are fermenting materials in the house, but if not the troughs should be filled and kept so with the drainings of the dungyard or stables, cowbyres, &c., but avoid the drainings of piggeries. Failing the materials named, employ 1 lb. guano in 20 gallons of water, which is also useful for watering Vines in pots, the water being applied at the temperature of the house. Tie up the Vines in position as soon as the growth has well commenced, and before the shoots are so long as to be liable to be damaged in the process. Sprinkle the house two or three times a day in clear weather, avoiding a close atmosphere on the one hand, and a dry one on the other. Disbudding should not be practised until the fruit shows in the points of the shoots.

When a supply of ripe Grapes is required in May, the Vines must be started without delay, nothing favours satisfactory starting more than a good bed of leaves and sweetened stable litter placed on the floor of the house and turned daily. The outside border should have the needful protection from cold rains and snow, two-thirds of leaves to one of stable litter affording a less violent and more lasting heat than dung. Provided the borders were covered with bracken, straw, or litter in early autumn so as to throw off the rain, the temperature will be considerably warmer than that of exposed borders, and in their case covering with fermenting materials may be dispensed with, but a covering of fresh leaves, so as to raise gentle warmth, is preferable, especially to those entirely outside. The inside borders should be brought into a thoroughly moist condition by applying water, and in the case of weakly Vines liquid manure at 90°. Start with a night temperature of 50° in severe weather, 55° in mild weather, and 65° by day, except the weather be severe, when 55° will suffice, not exceeding those figures until growth commences. Maintain a moist atmosphere by syringing occasionally, but excessive moisture excites the emission of aerial roots from the rods. Depress the rods of young Vines to the horizontal line, or below it, to insure the regular breaking of the eyes.

Vines in midseason houses from which the Grapes have been cut should be pruned, indeed there must be no delay in this work after the leaves are down. Any Grapes still hanging may be cut, placed in bottles of clear rain water with a piece of charcoal in each. The Grapes

often keep better that way than on the Vines, as the temperature of a Grape-room is more equable than can be commanded in a vinery. Keeping Grapes hanging after they are matured and the leaves fallen may not prejudicially affect the Vines unless prolonged to a late period, yet the greater amount of young wood keeps the sap more or less in circulation, and there is a certain amount of waste going on which cannot take place when the Vines are pruned. Prune, therefore, directly the leaves are fallen, cut any thin-skinned Grapes, as they do not require the maturing so necessary for such varieties as Gos Colman, and thick-skinned varieties generally. In pruning adhere to the system that has proved satisfactory. If the Vines are in good condition they will give sufficiently large bunches if pruned to a couple of buds, good useful Grapes, so essential for keeping the table supplied with fresh fruit daily. But if larger bunches are wanted, or the Vines, from weakness or other causes do not afford them so large as required, leave more growth, only be careful to select sound, round, well developed buds on firm well ripened wood. Large bunches are invariably defective in the finish of medium sized bunches. Aim, therefore, at finish. Vines that afford well finished examples when pruned to one bud will give a larger bunch and of equal finish from the second bud. If the soil be rich, plentiful and loose, the chances are the shoots or canes will be gross, long-jointed, having large thin textured leaves, the buds large, pointed, or if laterals are encouraged flat, and these may give the sensational bunches, which justly have their merits calculated by weight. If, on the other hand, the roots are in a firm but favourable rooting medium, causing an increase of root ramifications, then the wood will be stout and short-jointed, the leaves thick and leathery, and the buds at their base will be round, plump, and well matured. It is, of course, assumed the foliage has full exposure to light for the solidification of the growth as made, and that cultural requirements are granted in full measure. Let the Vines be dressed, the house thoroughly cleansed, and everything placed in order, so that there need be no hurry later on. Keep the house as cool as possible, to insure complete rest.

In late houses take every precaution possible against damp. Leaky roofs are a prolific cause of decay in Grapes; a single drop of water getting inside a bunch of Grapes is sufficient to spoil it. Though the decay may only be a berry it soon spreads and spoils the whole bunch, especially when the faulty berry is in the interior of the bunch, so that it escapes detection until the mischief is done. Remove all leaves as they become ripe, affording only sufficient fire heat to maintain a temperature of 40° to 45°, and close the house in damp weather, seeking to insure a dry, cool, and equable temperature. Muscat of Alexandria should have a temperature of 50°, a gentle warmth in the pipes constantly so as to prevent the deposition of moisture on the berries, but when the weather is cold and sharp allow the temperature to fall 5° or 10°, being careful not to allow the temperature to be much accelerated by sun heat or natural warmth without a free admission of air.—PRACTITIONER.



ORCHIDS AT ST. ALBANS.

MESSRS. F. SANDER & Co.'s great establishment at St. Albans seems to become more astonishing every year, not only in extent and numbers of plants, but also in the remarkable healthy condition distinguishing so varied a collection of Orchids. Cattleyas of all sections that were only imported six months ago are now fine vigorous plants, throwing up strong and abundant sheaths, and promising a rich display of flowers next year. House after house of *Odontoglossum crispum* and *vexillarium*, with all the other chief favourites in that genus, present similar results of good treatment. *Cœlogynes* and *Cymbidiums*, *Lælias*, *Dendrobiums*, *Masdevallias*, *Angræcums*, *Cypripediums*, and with many others that cannot be mentioned now, are all that the most critical could desire. Of the *Angræcums* one of the most attractive and free-flowering is *A. Sanderianum* (fig. 65), which succeeds especially well at St. Albans, producing its long racemes of creamy white flowers in profusion. Grown in small baskets suspended from the roof of a house with a temperature of 55° to 60° it seems to be thoroughly at home.

HYBRID CYPRIPEDIUMS.

Cypripediums are just now one of the special features, and the attention which has been given for some years to hybridising and seed saving is beginning to produce satisfactory results. For instance, there are three or four hybrids in flower that possess extremely distinct characters, and must be considered as most valuable additions to the list of cultivated Cypripediums. One of these is an exquisitely beautiful hybrid from *C. superbiens* (Veitchi) and *C. hirsutissimum*, which shows a remarkable combination of the characters distinguishing those species. It has a somewhat heart-shaped dorsal sepal, 1½ inch wide by 1½ deep.

suffused with a soft delicate purple tint, with a few slightly deeper purple streaks, and faint green veins underlying the purple suffusion. There are also some dark dots at the base running into the veins. The tip is pale green, the margin has a number of white downy hairs, and the inner surface is also covered with a slight tomentum. The lower sepals are small and greenish. The petals are $2\frac{3}{4}$ inches long by five-eighths inch broad at the widest part near the points. They are slightly deflexed, partaking somewhat of the *C. hirsutissimum* character, but very distinct in colour, soft purple, green at the base, with fine dark spots at the base, and dark marginal hairs. The lip is suggestive of *C. superbium* in shape and colouring, but is a distinct shade, and is dotted and

rounded, margined with white, rich dark crimson, with chocolate spots. The petals are very dark, with three dark dots on the upper margin, the lower half at the base being of a peculiar transparent green with a few dots; the lip is very dark, and the whole surface of the flower has a polished shining appearance that in a bright light is very effective. It is undoubtedly a grand acquisition. Another hybrid from *C. purpuratum* and *C. Spicerianum* is also very promising, but the flower is not quite expanded.

SEASONABLE HINTS.

THE pseudo-bulbs of *Dendrobium Brymerianum* have attained a length of 18 inches in baskets suspended beneath the roof. The



FIG. 65.—ANGRÆCUM SANDERIANUM.

suffused with purple. The leaves are long and narrow, regularly and prettily marbled on light green. The great charm of the hybrid is in the peculiarly soft and pleasing purple tinting, which is quite unique.

A more pretentious beauty is a hybrid from *C. calophyllum*, crossed with *C. ænanthum superbum*, and therefore possessing a most interesting parentage, both the forms named being themselves hybrids, *C. calophyllum* from *C. barbatum* and *C. venustum*, and *C. ænanthum superbum* from *C. insigne Maulei* and *C. Harrisianum*. *C. ænanthum superbum* is generally regarded as one of the finest hybrids ever produced; but some may probably consider the newcomer as, in some respects, an improvement upon that in richness of colouring and general appearance. The dorsal sepal is broad,

growths are firm, and only sufficient water should be given to keep the foliage fresh and their pseudo-bulbs plump. Make every attempt to ripen them thoroughly by placing them in a temperature 5° lower than the one in which they have been grown, where the atmosphere is dry and the plants can be fully exposed to light. The flower buds will soon appear if they are not already visible near the top of ripened pseudo-bulbs. The current season's growths must be well ripened and the plants allowed to enjoy a lengthened season of rest after flowering. Next season's flowers and good growth largely depend upon a thorough and complete season of rest. Dendrobiums frequently degenerate through being kept in heat and consequently in a growing condition more or less throughout the year.

LÆLIA ANCEPS.

The earliest of these will be ready for unfolding their beautiful flowers. Place them while in flower in a temperature of 50° where the atmosphere can be kept moderately dry; the flowers will last in good condition much longer than if retained in the Orchid house where a fair amount of moisture is necessary. Plants that have flower spikes advancing and are not wanted in flower for some time will be safe if placed in a temperature of 50°. Be careful not to give them too much water while being retarded, or injury to the roots may result.

LÆLIA AUTUMNALIS.

When grown under the same conditions as *L. anceps* this usually flowers about the same time, and like that can be retarded for some weeks. The flowers do not last more than half the time that those of *Lælia anceps* do, but it is nevertheless well worth growing in quantity. Both flower freely during the months of November, December and January, according to the temperature in which they are grown. Very frequently where different houses are not set apart solely for Orchids *Lælias* often have to be grown in a warmer temperature than is really desirable. Both these adapt themselves to ordinary stove treatment well. The most suitable place for them, however, is the *Cattleya* house, where these plants are not kept too warm during the winter months.

PLEIONES.

The young growths of these commence springing up from the base directly the flowers fade, and should be repotted at once. If neglected in this stage it will tell seriously against them next autumn. When under good treatment they should have made bold pseudo-bulbs, and flower freely. These plants are easily grown, requiring a good rest from the time the foliage commences to fade by keeping them dry. From the time the flowers show, water should be given in small quantities, and gradually increased as growth extends. In potting remove the whole of the old compost, liberally drain the pots or pans, cover the drainage with a little moss, and employ a compost of fibry loam two parts, the other part being composed of leaf mould and sand. A little charcoal broken up fine may be added, and one-seventh of decayed cow manure that has been stacked for six months, and passed through a fine sieve. These dwarf deciduous Orchids require a stronger and richer soil than many growers are disposed to give them. A compost that suits *Calanthes* will do for these plants, which deserve more attention than they receive.

MASDEVALLIA TOVARENSIS.

To keep this in good condition throughout the winter the temperature in which it is grown should not fall below 50° in the morning. It will not bear being kept as cold as other *Masdevallias*. In a temperature that ranges from 50° to 55° it is producing its flower spikes freely. Where it is possible to use the flowers without cutting off the spikes it is wise to do so, for they will flower a second time. Do not allow this or any of the *Masdevallias* to suffer by want of water. The temperature for others should not fall below 45° in the morning, or else their foliage are liable to become spotted and disfigure the plants for a long time. Spotting is the result of a low temperature and too moist an atmosphere.—ORCHID GROWER.

MUSCAT GRAPES AT SHOWS.

At the recent Liverpool autumn Exhibition, in the class for four bunches of Grapes, to be distinct varieties, an exhibitor was placed first with a stand including Muscat of Alexandria and Bowood Muscat. Now, I consider that Bowood Muscat so closely resembles Muscat of Alexandria as not to be permissible as a distinct variety. A great many growers, I know, maintain that it is. I, for one, do not think so. The only difference that I can see is that the Bowood Muscat under good cultivation produces its berries somewhat more round, and that the bunches assume a more clustering shape, but under different methods of cultivation, combined with favourable local conditions, Muscat of Alexandria and Bowood Muscat can be grown to so closely resemble each other, that I do not think the most expert judges can be so certain as to proclaim them distinct varieties; therefore, when the difference is so trifling I do not consider there is enough margin left to acknowledge them as distinct in a class for Grapes.

This is a matter of great importance to exhibitors, hence my appeal to your columns. The exhibitor in question wrote to the Liverpool Committee, I believe, on the subject, before he entered the Grapes, which proves it a doubtful point as far as he is concerned, and received their sanction to exhibit them as distinct, so the responsibility in this case rests with the Committee. But is this to be generally recognised at exhibitions? I do not think that it should; if so, I am firmly of opinion that it will give rise to much dissatisfaction. I write this for

publication in the pages of your valuable paper in the hope that some correspondents will give their opinion.—INQUIRER.



EVENTS OF THE WEEK.—The Fruit, Floral, and Orchid Committees of the Royal Horticultural Society will meet on Tuesday next, December 9th, in the Drill Hall, James Street, Westminster, and as the last gathering of the year it is expected, if the weather is favourable, that there will be a good number of exhibits and a full attendance of the members. The same evening, at 6 P.M., a meeting of the Horticultural Club will be held in the Hotel Windsor, when a paper will be read on Rose stocks.

— THE LATE MR. SHIRLEY HIBBERD, F.R.H.S.—The many paragraphs, not only in the gardening papers but also in several London newspapers, testify to how deep and widespread is the feeling of loss sustained by the comparatively early death of Mr. Shirley Hibberd. A letter, with several influential names attached to it, has been forwarded to the Royal Horticultural Society, requesting the President and Council to take the initiation in promoting some public memorial of our late friend's life and work. Mr. Shirley Hibberd's services to horticulture have been so many and varied, and his devotion to the interests of our Society has been so enthusiastic and thorough, that the President and Council gladly accept the suggestion, and have desired me to announce that a public meeting will be held in the Society's office, 117, Victoria Street, Westminster, on Tuesday, December 9th, at 1 o'clock, to consider the question of raising a suitable memorial to the late Mr. Shirley Hibberd. I shall feel greatly obliged if you will kindly assist me in making this known as widely as possible.—W. WILKS, M.A., *Vicar of Shirley, Croydon, Secretary Royal Horticultural Society.*

— THE WEATHER IN THE METROPOLITAN DISTRICT has been extremely wintry during the past week, the keen winds of Tuesday and Wednesday being followed by heavy snow, varying from 3 to 4 inches near London, but further out up to 18 or 20 inches. Low temperatures were also experienced, 15° to 20° being registered in exposed positions. A partial thaw occurred on Sunday and Monday, succeeded by frosts and fogs.

— THE WEATHER IN THE NORTH.—Three days of very wintry weather have been experienced in Scotland in the latter half of last week. Snow has fallen over the country generally. In South Perthshire dense hoar frost took the place of snow. On the morning of the 27th ult. 14° of frost were registered, 10° and 8° following. Thaw followed on Saturday night, and on Monday morning the thermometer stood at 50°, with a soft S.W. wind.—B. D.

— FROST IN HAMPSHIRE.—The weather here during the last few days has been exceptionally severe. On the 27th ult. we registered 10° frost, on the same day a thin covering of snow fell. On Friday, 28th, early in the morning we had 14° frost, and at 3 P.M. the thermometer stood at 15°, or 17° frost, and gradually until at 2 A.M. on Saturday morning it registered 9° on the scale, or 23° frost, which is the most severe we have experienced for the last twelve years. On Sunday the wind veered from the north-east to S.S.E., a rapid thaw setting in, but which lasted only a few hours, when light frosts again occurred with the wind in the same direction. I never saw frost penetrate so deep in the soil in such a short time as during the three days of last week. Some soil which had been recently moved was frozen to a depth of 18 inches. Such sudden weather as that experienced ought to prove the necessity of attending promptly to the mulching of all newly planted fruit trees or shrubs, instead of delaying for a few days, until a more convenient opportunity is available.—E. MOLYNEUX.

— LETTUCES.—I grow Lettuces for market largely, and try many varieties. The best summer Cabbage Lettuce I have ever grown is Yates' Champion, for which I was awarded a certificate by the Nottinghamshire Horticultural and Botanical Society in 1889; and the best winter Cabbage Lettuce is Lee's Immense Hardy Green, from which I am cutting now. I should like to know what varieties other gardeners have found satisfactory.—J. B., *Nottingham.*

— **GARDENERS' ORPHAN FUND.**—At the Committee meeting of this Charity held on Friday night last, Mr. William Marshall in the chair, it was unanimously resolved that the Committee place on record their deep sense of the great loss sustained by the deaths of Mr. James McIntosh and Mr. Shirley Hibberd, Vice-Presidents of the Fund, and warm supporters of the same.

— THE following additions were announced to the FUND since the previous meeting. From the Chiswick Gardeners' Improvement Society as the result of a concert, £20; from Mr. J. Smith, Mentmore (concert), £10; from Mr. Proctor, nurseryman, Chesterfield, the result of work done by his invalid wife, £5; from Mr. W. Bates (Twickenham Chrysanthemum Show), £1 15s. 6d.; from Mr. J. A. Vallance (Bristol Chrysanthemum Show), £1 5s. 3d.; from Mr. G. W. Cummins (flower stall at the Croydon Chrysanthemum Show), £7 14s.; and from the collecting box in Mr. Smee's garden during the week it was open to the public for inspecting the Chrysanthemums, £4 2s. 6d. These seem appropriate methods of assisting the Fund, not only in an easy, but, in most cases, an enjoyable manner to the contributors, whose united mites amount to a substantial sum for an excellent object, in this instance the sums named being adequate for the support of a child for upwards of three years.

— **THE DEAL MEMORIAL.**—It was announced that the sum collected as a memorial tribute to the first esteemed Chairman of the FUND, the late Mr. George Deal, amounted to £302 2s. 6d. In accordance with a generous undertaking made by Mr. H. J. Veitch and Mr. N. Sherwood at the last annual dinner, those gentlemen sent cheques, increasing the total to £554 2s. 6d., which will enable the seven unsuccessful candidates at the last election to become beneficiaries of the Charity, as will be explained at the special general meeting which is to be held at 6 P.M. on Tuesday next, 9th inst., at the Cannon Street Hotel, for the purpose of making slight alterations in the rules. All subscribers are invited to attend the meeting.

— **PRESENTATION TO MR. GEORGE LAING PAUL.**—On the occasion of the son of Mr. George Paul, Old Nurseries, Cheshunt, attaining his majority on Friday last, the workmen in the nurseries were entertained at supper by Mr. Paul and his son in the Public Hall at Cheshunt. The senior foreman, Mr. George Gater, in proposing the health of the young master, surprised him with the gift of a handsome marble clock, on the part of himself and fellow workers. This gift was not the less appreciated in being presented by Mr. Gater, who has been an active worker in the firm for upwards of forty-two years, having been apprenticed to the great grandfather of Mr. George Laing Paul. The supper was enjoyed by 110 persons, and was a pleasant gathering of employers and employed, between whom the utmost cordiality exists, which makes life agreeable for all. We ask the acceptance of our best wishes by Mr. G. L. Paul for a bright and successful career.

— **"HAZELL'S ANNUAL."**—A copy of the sixth issue of this general year book of reference has been sent to us. Its 700 closely packed pages contain information on those subjects of current interest in which the majority of readers desire information. A liberal share of space is devoted to biographies of eminent persons. The labour movement is adequately discussed, and there is a great quantity of tabular matter on various subjects, the whole forming a condensed cyclopædia of technical and popular information, and altogether the work is a valuable production.

— **THE TOTAL RAINFALL AT CUCKFIELD, Mid-Sussex,** for the past month was 2.94 inches, being 0.73 below the average. The heaviest fall was 0.50 inch (snow) on the 26th. Rain fell on twenty days. The highest temperature was 57° on the 23rd, the lowest 7° on 29th. Remarkably mild up to 23rd, the temperature rising above 50° on eighteen days out of the number. Last week equally remarkable for its severity. Heavy fall of snow on 25th and 26th. Below is the readings for the last five days:—26th, max. 30°, min. 27°; 27th, max. 29°, min. 22°; 28th, max. 24°, min. 17°; 29th, max. 32°, min. 7°; 30th, max. 34°, min. 20°.—R. P.

— **CARDIFF HORTICULTURAL SOCIETY.**—The first annual dinner of this Society took place at the Queen's Hotel, Cardiff, last week under the presidency of Mr. James Lewis. The company, which numbered over forty, included the principal growers and amateurs of the district—viz., Messrs. A. Pettigrew (Castle Gardens), W. Treseder, S. Treseder, T. Clarke, R. Crossling, T. Malpas, Bishop, the members of the Committee, and others. In responding to the toast, "Success to the Society," the Chairman gave a brief outline of the origin of the

Society, which sprung from the ashes of the old Glamorgan Society. He stated the last Show was a success in every way, and a substantial balance would be carried forward to next year, which it was intended to make still more successful. The schedule would be very much enlarged and a strong committee appointed at the general meeting in December to carry out the programme, and if all worked with a will the Society would take its place as the leading show in the municipality. The next show (two days) will have to be held rather early in August in consequence of the visit of the British Association, which is timed for August 19th to 26th, and the date fixed in all probability will be the 12th and 13th.

— **B. S. WILLIAMS' MEMORIAL FUND.**—It being intended to close the above at an early date, subscribers who have not yet sent in their donations are requested to do so without further loss of time to Mr. Harry J. Veitch, Hon. Treasurer, 544, King's Road, Chelsea, S.W., or to either of the Hon. Secs., Mr. John A. Laing, The Nurseries, Forest Hill, S.E., and Mr. A. Outram, 7, Moore Park Road, Fulham, S.W.

— **SECOND CROPS OF FRUIT.**—After nearly a week's frost and snow we may fairly expect that we have heard the last about the mildness of the season and ripe Strawberries and Raspberries; but there is one case I will mention, that I gathered ripe Jargonelle Pears from a second flowering on the 14th of November. A similar circumstance I cannot call to mind. Second crops of Plums have come under my notice, surpassing in quantity the first crop, and although they did not ripen they sold at 12s. per pot.—J. HAM, *Astwood Bank*.

— **CHRYSANTHEMUM SHOW FIXTURES FOR 1891.**—No horticultural societies are so prompt and early in fixing their dates as those devoted to the Chrysanthemum. Scarcely have the shows for one year concluded when the fixtures for the next year are announced, and in the case of the larger exhibitions this is very desirable, as it enables other societies to avoid as far as possible the dates selected. Already we hear of the following fixtures:—The National Society has decided to hold their annual Chrysanthemum Show on Tuesday and Wednesday, November 10th and 11th, at the Royal Aquarium, Westminster. The Kingston-on-Thames Society has chosen the same dates, and the experience of the present year proved that neither Show suffers in consequence, in fact it is probably a mutual advantage. The Northampton Society takes Wednesday and Thursday, November 11th and 12th. We shall be glad to announce other dates as soon as the Committees have decided upon them, for the reason stated above.

— **ADDITIONAL NOTES ON SYRINGING.**—Since my notes on syringing appeared in the Journal I have seen an ingenious mode of applying insecticides to plants which have become affected with vermin that cannot fail to be of the utmost service to plant growers. All insecticides that are really so must from their nature be expensive, and the waste which is caused by the use of the ordinary syringe in applying them has been a sore point with many in these days of economy. Besides this the difficulty of syringing plants without injuring the roots has necessitated their being laid on their sides in some cases to the no small detriment of the plants operated upon. The inventor of the "Stott Patent Sprayer," which is the name of the article referred to, has obviated these defects by a simple and effective contrivance which much resembles an ordinary garden engine nozzle with a check end attached. This check end causes the fluid to ascend in a fine spray through a small opening, which from its construction can easily be applied to the under side of the leaves where insects generally commence operations.—M. D.

— **PROGRESS IN CHRYSANTHEMUMS.**—In opening the Hornsey Chrysanthemum Society H. R. Williams, Esq., a gentleman of great influence and usefulness in the locality, and whose name is also prominent in the fruit world, said he did not know what state of perfection the Chrysanthemum was likely to reach, but when he compared the specimens exhibited that day with those he remembered seeing in his father's garden years and years ago, he could not help wondering at the marvellous progress that had been made. When all the other flowers were dead and forgotten the Chrysanthemum blossomed with freshness and grew to cheer them in the dark and sombre wintry days. The cultivation of the beautiful flower refined their taste and improved their minds, and he felt a better man for having come to the Show. In formally declaring the Exhibition open he wished it every success. He opened one at Highgate last week. Highgate used to be the hamlet and Hornsey the village. But now there was little village sentimentality about it, and Hornsey had grown to become one of the best and most important of all residential suburbs of London. Mr. Williams' gardener took many

prizes. Colonel Bird moved a vote of thanks to the Judges, President, and exhibitors. He thought that they should all bear in mind the fact that it was to the gardeners who had reared up the plants so tenderly that their thanks were in a great measure due.

— GRAPE GROWING AND GRAPE KEEPING.—In reference to Mr. Westcott's remarks, page 446, I have concluded that he has never given the prescription referred to a fair trial, but has used it in a rough state, which accounts for his statement that such a compound could not possibly enter into the crannies where mealy bug and other insects generally lodge. Had the mixture been run through a fine sieve and properly painted on the Vines, and not have been merely smudged on, as Mr. Westcott is pleased to term it, his experience would have been quite different. At present I am having the vineries painted, but as I do not syringe the canes I have no fear of the houses being disfigured; and supposing I did syringe, I would not go at it with all my strength, but would simply send a light spray with just sufficient force to reach the Vines, and in this case there would be no fear of the house getting bespattered. It is a mystery to me why Mr. Westcott wants to syringe with such force. My experience is that to syringe in this manner is very injurious. The method I have advocated for destroying insects on Vines is most economical and effective. I am well aware of the properties of certain insecticides, but to saturate a cane thoroughly with any of them so as to destroy mealy bug, &c., will prove injurious, to clear all the bark off will also do harm, and to solely depend on sponging throughout the year is a long and tedious method, which generally fails, especially when there is a press of work. Experience has taught me how effective my practice of destroying insects is, and I mean to keep to it till one is proved to be better, which Mr. Westcott has failed to do.—S. SCOTT.

IRON.

ITS USE IN CONNECTION WITH FRUIT CULTURE AND DISEASES.

IRON is present in igneous rocks, in volcanic as peroxide 5.17 per cent, plutonic as peroxide in Cornish grey granite 1.97, protoxide 1.04, up to 15.76 peroxide in Swedish trap. These rocks weather down into very much the same kind of soil. The rocks are termed felstones, felspar; greenstones, diorite, gabbro, diabase, dolerites, all having a greenish colour; and greystones, felsites, trachytes, and lavas. Felspar is among the most important rock forming minerals, occurring abundantly in granites (Peterhead)—iron peroxide 1.49, iron protoxide 0.43, and the characteristics are the potash felspar and soda felspar, also lime felspar. In potash felspar the potash varies from 4 to 16 per cent., and the soda rises from nothing to 10 per cent. In soda felspar the soda rises to 12 per cent., lime taking the place of potash. In the lime felspar lime rises from 6 to 20 per cent., and soda from 1 to 8 per cent. The felspars occur in all traps—Swedish, as just stated containing iron peroxide 15.76. Greenstone or whinstone is a mixture of hornblende and felspar, and syenite has felspar for its most abundant ingredient—iron peroxide 2.57, iron protoxide 5.75; diorite—iron peroxide 9.27; greystones—felsite contains iron protoxide 2.69; trachyte—iron peroxide 5.17; lavas—iron peroxide 5.69, iron protoxide 5.13. Iron, therefore, is abundant in the igneous rocks. They are naturally digested in carbonic acid water, which removes the alkali and disintegrates the mineral-producing clay—sedimentary or mechanically formed soils—viz., argillaceous or clayey, and arenaceous or sandy, which are termed aqueous rocks through deposition in water; stratified, yet granular in texture.

Besides the mechanically or sedimentary formed aqueous rocks just mentioned there are of the same order chemically, and organically formed rocks—viz., calcareous, silicious, phosphatic, carbonaceous, and ferruginous. There are also metamorphic rocks, or those the original character of which has been altered by new chemical combinations; limestone, for instance, converted into marble, sandstone into quartz, clay into slate, slate into schist, &c., approximating to the character of igneous rock, and in all we find iron, except in Carrara marble and Italian dolomite—viz., Welsh slates contain iron protoxide 7.83, and Cornish slates iron protoxide 5.14, and iron peroxide 13.39 per cent.

This matter may seem foreign to our subject, but it is of primary importance that we understand how rock originated, what it is composed of, and what kind of soil it will break down into when exposed to the atmosphere. Geologists tell us that four-fifths of the earth's crust consist probably of felspar and quartz. Felspars are double silicates of alumina and potash, or soda, or lime; quartz is oxide of silicon or silica, best seen pure in sea sand; micas are silicates of alumina, potash, or magnesia, with oxide of iron; hornblende contains silicates of magnesia, lime, and protoxide of iron, alumina being replaced by iron oxides and magnesia.

We have given enough to show that soil is due to the decay of igneous rocks, and as iron enters into their composition it follows iron must form an ingredient of most soils. Felspar, it has also been stated, is the most abundant of all minerals, that its decomposition is due to carbonic acid gas (carbonic dioxide) in water; the lime, potash, or soda they contain is converted into a soluble carbonate, the silica set free remaining impalpable, which with the silicate of alumina forms an unctuous, plastic, yet mealy powder, chemically termed hydrated silicate of alumina, and geologically kaolin, its composition—silica 46.4, alumina 39.7, water 13.9; but the per-centages vary, and lime, magnesia, potash, soda, and iron-peroxide may or may not be present; mineral silicates resulting of the disintegration of hornblende containing iron protoxide 18.75, therefore besides kaolin or clay igneous rocks furnish lime, magnesia, peroxide of iron through oxidation of protoxide, and a hydrated silicate of protoxide is a product of the alteration, hence the abundance of iron silicate in sedimentary strata, and it is the presence of iron that gives the colours green and brown to clays. White clays are derived from serpentine, and often contain 33 per cent. of magnesia. Red clays contain iron peroxide 6.84, protoxide 0.32. They are of the coal measures and other strata, probably derived from similar rocks to basalt clays, which contain from 9.17 to 14.87 protoxide. In the change from the rock to the soil there is a loss of lime one-fifth, soda one-third, very little potash; but great gain of alumina, and iron oxides one-fourth. Ultimately the greatest losses is in potash and soda, then lime and magnesia, next silica and iron.

Iron is the basis of most rock pigments—they are red, brown, yellow, green, according to oxidation and hydration. Silicious cement forms sandstones, sand cemented by lime forms Kentish rag; if felspars intersperse millstone grit results, or if clay and sand get together we have new red sandstone. Sand particles cemented by peroxide of iron form red, yellow, or brown ferruginous sandstone, the upper greensand are green through silicate of iron, and the pudding stones of Hertfordshire are held together by calcareous, argillaceous, silicious, or ferruginous cement. Brick-earth, also brown or reddish loam, enclose calcareous concretions; gravel is an aggregation of rocky fragments embedded in finer material, cemented into solid rock it is conglomerate, and shingle is rounded rock fragments. Sandstones are not very irony, 0.25 is a minimum as in chalk flint; red sandstone contains peroxide 1.30; carboniferous a little in combination with alumina; also magnesian in similar combination.

Alumina is the basis of all clays; they are plastic combined with water, and harden when exposed to heat. If they are burnt water enters into no chemical combination when absorbed, but if charred, clays retain their chemical properties. Dark bluish-grey colour denotes oxide or sulphide of iron, often organic carbonaceous matter, and all clays emit an earthy smell when breathed upon. Clays are more or less calcareous; cement stones arise in some, or clayey matter separated by lime, and clay ironstone occurs in segregated masses in rocks or shales. Finely divided and intimate mixture of clay and sand constitute brick-earth or clay mixed with fine sand, the latter in such proportion as to allow water to percolate the mass freely and prevent its cementing together, and is a good example of loam. The light brown colour of many loams is due to peroxide of iron. Blue clay contains iron protoxides, 4.17; cretaceous, 6.7; white (carboniferous), 2.95; red (carboniferous) iron peroxide, 6.84; protoxide, 0.32; marls contain iron along with alumina, chalk marl, 3.04; clay marl, 11.92; sandy marl, 3.8; while new red contains 25.38 per cent. of alumina and iron oxide.

Limestones contain varied amounts of iron. Chalk with flints contain iron and alumina, 0.42; Portland limestone, 2.0; Kimmeridge, 8.2; oolite, 1.20; magnesian limestone, 1.8; Silurian limestone, nil; red chalk (Norfolk), 6.4. Argillaceous (clay) limestones owe their bluish grey colour to bisulphide of iron, which exposed to the influences of air and rain, is oxidised into the sulphate (ferrous sulphate), and in the change effected by the sulphuric acid uniting with the alkaline bases (alumina, lime, magnesia, &c.), the protoxide becomes hydrated peroxide of iron. The dark colour of rich cultivated lands is due to their being furnished with abundance of organic matter. Minerals present having a basis of iron-protoxide impart a bright deep green colour to rocks. Decomposition sets in on exposure, silica is set free, the iron taking up water and additional oxygen converted into a hydrated peroxide, consequently the rock loses its green colour, passes to yellowish brown as seen in the soils of the upper and lower greensand.

Argillaceous beds contain concretions of iron pyrites, become oxidised on exposure into sulphate, then pass into brown hydrated oxide. To that and the decomposition of another small portion of iron sulphide is due the change in the London, Kimmeridge, and Oxford clays from dark bluish grey at varying depths to a light burnt umber brown near the surface.

Soils owe their bleached appearance, as in the New Forest, to loss of peroxide of iron. The organic matter from the peat or Heather reduces the peroxide of iron to a protoxide; the free carbonic acid converts it into a carbonate. This salt being soluble is removed by the same surface waters, leaving the upper part of the gravel colourless, sometimes quite white. Sand in peat is white or yellowish; sands underlying peat are often bleached; the same occurs in alluvial deposits long exposed; iron sinks. The facts are iron is washed out of sands, out of limestone, out of vegetable soils or peats, causing it to accumulate in subsoils or in bogs.

The Thames, from the oolite and chalk of Berkshire, Gloucestershire, and Oxfordshire, derives half a million tons of matter in a year, two-thirds of which is carbonate of lime, which is carried out to sea, for river sediment contains little or no carbonate of lime, but consists of silica, alumina, and peroxide of iron, &c. In the silt of the Nile there is peroxide of iron, 20·21. Soils are liable to lose in proportion to their porosity and the presence of acids, freely diffusible as hydrochloric, nitric, and sulphuric—the last in a much less degree; the former combined with soda, the second with lime, forming chloride and nitrate respectively, and sulphates result of the third. Soda and lime are diffusible bases, and sulphates are in measure only less diffusible. The greater the percolation of water through a soil the sooner the matters are washed away, but ammonia, phosphoric acid, and potash are held, for fertile soils have corresponding retentive power. Iron being in sulphate form passes away with other substances, and the soil shows a poor percentage of iron. Some gravelly soils, even on the new red sandstone as in Cannock Chase, are mere waste; but the Hastings beds where interstratified with clay, the clay and calcareous weathering down together, a productive soil results, for the lime attacks the iron in the alumina where it has been held; yet where silicious soil contains nodules of iron a poor soil result. The soluble iron is washed out. Millstone grit is a poor gravelly soil; there is no iron of consequence where it is drained, but where the subsoil is clay iron obtains in the pan. How does it get there except by washing? If the lower greensand has a silicious soil mingled with silicate of iron it is barren and wet. It wants drainage and lime; in fact, where it becomes calcareous, as near Hythe, it is productive, yielding good crops of Hops. Indeed, the Hythe beds are the most important of the lower greensand strata, largest, most fertile, and most valuable in product. In Kent it is limestony (Kentish rag) and this mixed, as it often is, with brick earth is highly fertile. Woburn sands are of lower greensand age; so sterile in places as to grow little besides Scotch Fir, but at Sandy the sand gets an admixture of alluvial soil (we shall presently see what iron has to do with alluvial deposits) resulting in market gardens of extraordinary productiveness.

Upper greensand, where it is an admixture of chalk marl, is perhaps the richest soil and easiest cultivated. Its fertility is due to coprolites providing a supply of phosphorus. Marl we have seen is rich in iron. Where the soil of the upper greensand is very light the remedy is Gault clay—iron gone out—bring it in!

Chalk in its upper layers is white, bleached, iron washed out, the little resulting of animal debris; but the lower chalk is dingy, owing to the presence of iron, a mixture of the two causes good crops to issue. Chalky loams mingled with flints usually are excellent soil, indeed lime is inseparable from the cultivation of fruit, the Romans using it as a manure for fruit trees, acting, as it does, most beneficially in liberating potash from insoluble compounds, and hastening nitrification.—G. ABBEY.

(To be continued.)

BERBERISES.

(Concluded from page 365.)

THE deciduous species are best raised from layers, and the evergreens by suckers, with a portion of root attached to each when taken from the parent. Layering may be done any time whilst the plants are at rest, but about this there are many opinions. Some will insist that it ought to be done when the sap is descending, for then a callosity is sure to be formed; but others uphold that it is best done before the sap rises, for the plant emits fibres more rapidly then than at any other period, and a tongued branch is more likely to callus at that time than when the plant is all but at rest.

find spring the best time for layering and getting plants of any kind to root quickly; but in the case of the Berberry it is immaterial what time they be layered, if tongued like a Carnation to facilitate the process, and pegged securely under the surface, leaving the slit open, and allowed to remain attached to the parent plant for twelve months from the date of the operation. The layers then may be detached from it, taken up with as much soil as will adhere to the fibres without falling off, and planted either

in beds to gather strength, or at once into the places where they are to remain.

Division is simply taking up an old plant and slipping the side shoots off with as much root adhering to them as possible, or digging round an established plant, and so opening a trench, and then taking off the suckers without disfiguring the parent or checking its growth so much as lifting would. These suckers are planted in lines, three in a 4-foot bed, and the plants about a foot apart in the line, more or less according to their size, from whence after a couple of years' growth they are transplanted to their final quarters.

After planting, deciduous Berberries require very little management. The shrubbery should have the weeds kept under, never allowing them to seed, and be slightly hoed and raked over at least twice during the summer, besides any weeding that may be required, and a general clearance of decayed wood and leaves after all the latter are fallen. When hard frost prevails a couple of inches of decayed leaves or other vegetable matter thrown on the surface will materially increase the health of the shrubs; and however much the flower beds may require a little of this vegetable earth I would not forget to let the shrubs have the decayed remains of the leaves taken from them the year before. I object to digging amongst shrubs at any time, especially when the roots nearly occupy the whole of the ground, and are close to the surface. The surface roots of shrubs are of as much moment to their well-being as those of a Vine are to successful Grape growing. Transplant a tree every year, and it becomes a dwarf; and shrubs in like manner, robbed of their roots annually by surface digging, become stunted. Pruning must be limited to cutting out irregular growths and such as overlap each other, as well as any dead wood that may be found. Should any shrub become unsightly it may be cut down; but if the plant be very old it would be better to stub it up and plant a young one, having first renewed the soil.

EVERGREEN SPECIES.—These are suitable for beds and groups on lawns. In either case the ground should be dug deeply, and a liberal amount of leaf mould or well rotted stable manure added, and if the turf has to be removed it should be turned in. Turf, however, makes such a good compost for plants, pot Vines, Pines, &c., that few gardeners can resist the temptation to rob the intended occupant of the bed of its due share of decayed vegetable matter by taking the turf away to the compost heap. Turf is so difficult to come at in most places that we can hardly insist on its being dug into the new bed; but still, every barrowful of turf taken away is equal to a barrowful of dung, or two of decayed leaves; therefore, for every barrowful of turf removed the same quantity of vegetable matter should be returned to the bed.

Where the ground is of a clayey nature the soil should be taken out 18 inches or 2 feet deep, and its place filled with a compost formed of two-thirds rich loam and the remainder leaf mould with a sprinkling of river sand. In digging this hole or bed another point must be taken into consideration: Can the water escape readily through the bottom of the bed, so as to prevent stagnant water lodging? If not, a drain must be cut to take away the water that will filter to the bottom, and where, unless there be a drain to carry it off, it will very soon cause the shrubs to assume a sickly appearance. Without drains in clay soils beds dug out a couple of feet deep are little short of a swamp during the greater part of the year, and the last plant to put in such beds is the Berberry, for, like the Sikkim and Bhotan Rhododendrons, they are all natives of the hills, where the rainfall is large, but the substratum of the soil of such a nature that no water can lodge so as to become stagnant.

Evergreen Berberries are better planted in early spring, but any time from the middle of October until April will answer; and even they may be removed in summer immediately after flowering, when it is possible to take up with a ball, and water freely for some time after planting. They may be planted in groups on lawns without any preparation of the soil, but then, unless the soil suits them, they will do anything but thrive.

Whether in groups or in beds they need little pruning, which should be confined to cutting in straggling growths, and such as are weak and old. The beds should be kept clear of weeds and leaves, and raked roughly occasionally to prevent moss forming on the surface. A dressing of leaf mould will tend to increase their vigour, and if it be pointed-in with a fork the bed will have a neat appearance during winter. The leaf mould may be applied any time in the autumn.

Some of the evergreen varieties make handsome pot plants; in fact, all the evergreens are useful grown in that way, either to ornament the conservatory in spring, or to plunge in the flower beds in winter, where their evergreen character is more beautiful than red brick, no matter how fine the tracery, and their rich yellow flowers impart a charm in spring.

The Mahonia or Berberis aquifolia is second to the Laurel only in usefulness, and yields to no evergreen undershrub in the beauty

of the flowers in early summer, and its beautiful purple berries in winter; these are produced in far greater abundance than those of the common Berberry, and make quite as good a preserve. Planted in woods it affords one of the best, if not the very best, cover for game. On a lawn it makes a good bed or group, and in shrubberies and by woodland walks it is quite at home. The treatment recommended for evergreen Berberries suits it, but it will thrive in nearly all soils and situations without any trouble beyond planting.—G.



AMATEUR ROSE GROWERS.—IN MEMORIAM REV. H. T. FRERE.

"AN Exhibitor" says: "It cannot be denied that the schedules of the National and many of the provincial and affiliated Societies, as at present constituted, are a monopoly, inasmuch as there is every facility and encouragement provided for the larger growers, but none for the smaller." I feel constrained to write once more to say that I deny this; it seems to me utterly at variance with the plain facts. He says, also: "The schedules are framed in such a manner as to obstruct the smaller growers." Would anyone believe, on reading this, that at the National Show not only are there very many restrictions and divisions as to who may and who may not show in every class, but also that there is an actual class with four prizes "for those who have never won a prize at a National Show?" Here, at all events, there must be four entirely new names every year.

But I should not have ventured to write again on this subject this week (hoping that "J. B." and "An Exhibitor" are preparing to bring forward their views at the coming general meeting of the N.R.S.) had not the latter made an astonishing quotation from "The Rosarian's Year Book for 1890." I hope anyone who has read his letter will turn to the Year Book, page 16, and read the whole of the passage in question. It seems to me the plainest statement of how "the young ones are either timid or wanting in energy, and will not believe that *Rose showing, like everything else, must have a beginning.*" (The part in italics is omitted by "An Exhibitor.") The passage goes on to narrate one instance (with the facts of which I am well acquainted) of the many that can be shown where it was simply "pluck, and not protection" that were required to raise a small grower in four years into the first rank.

I feel sure that, if it had been possible, the Rev. H. T. Frere, the author of the capital article in the "Year Book" thus quoted, would have written to protest against his well-known sentiments being thus distorted. But, alas! the same post that brought me the Journal this morning gave me also the sad notice of his death after a short illness; and it is left to his old friend and rival of many years' standing to declare that "Pluck, not Protection," was certainly his motto, and to assert that in the passage in question it was "the timidity and want of energy in the young ones" (which were certainly no failings of his) to which he ascribed the lack of new names among the winners at exhibitions. I am very glad he wrote that paper; a very good one it is, as I had the pleasure of telling him at the time. I have just read it through again two or three times, and have found the whole a strangely faithful memorial of the man as I knew him, and the first and last paragraphs especially touching in the light of that sad note this morning.

Mr. Frere, as his article in the "Year Book" testifies, was a veteran at Rose showing, and good to the last, as was seen by his winning the principal prize at Norwich this year; but he never could be persuaded to exhibit in London or away from the eastern counties, though well qualified to do so. An excellent winner, and a still better loser, it would astonish me much to learn that he ever made an enemy at Rose shows. But as a rosarian, horticulturist, and botanist, he ranked far above the ordinary exhibitor; he was perfectly qualified to judge anything at a flower show; and I always used to go round the tents with him, if possible, in order to take notice of what he pointed out (especially in herbaceous and wild flowers) as "good." Of his other attainments and qualities this is not the place to speak; and as a man and a Christian I would prefer to let his own paper in the "Year Book" speak for him, especially in the closing sentence which he adopts and endorses from the lips of an aged parishioner, "The reason why I love my flowers is that God Almighty made them so beautiful."—W. R. RAILLUM

NOTES ON EARLY ENGLISH HORTICULTURE.

(Continued from page 291.)

A LARGE number of exotic plants were brought into England during the reign of George II., that is, between 1727 and 1760. This is attributed chiefly to the stimulus given to research by the demand for new or rare species at the Chelsea Botanic Garden, where Miller was then curator, and in frequent correspondence with florists in all parts of Europe, being also in communication with travellers into nearly every part of the globe. It is reckoned

that in the above period we received upwards of 1700 new plants, more, indeed, than were introduced during the whole of the seventeenth century. Miller's exertions were seconded by several well known men, chiefly resident in or near London, who rank amongst the fathers of modern horticulture, most of them proprietors of nurseries, and who got their information not so much from books as from observation and practice. Some of them, at a time when travelling was a serious matter, braved the perils of land and water that they might see exotics growing in their natural soil, and be the means of bringing with their own hands into Britain plants suitable for garden or greenhouse. We find it is an historical fact that horticulture was advanced in our land much more by the exertions of men of small incomes than by those who had ample means at their command. Amongst the few noblemen of the reign of George II. who gave time and money to it, honourable mention must be given to Lord Petre, who died in 1742 at the early age of twenty-nine. At his residence in Essex (Ingatstone) he had houses and stoves, which contained specimens of most of the tropical plants then known. He had the first samples of the Camellia, a single red variety, but his plants died. The Duke of Chandos was one of the encouragers of gardening at this period, and it is supposed that Dr. Blackwell, afterwards of Chelsea, assisted him in planning the grounds of Canons, once so celebrated.

The wife of this unhappy doctor (who went to Sweden, got involved in a plot there and was executed) was more fortunate than her husband, and did good service to horticulture. Living in Paradise Row the pair were frequent visitors to the Apothecaries' Garden, and Mrs. Blackwell, who was skilled in drawing, obtained specimens of exotics there, drew them upon copper, and coloured them; to the plates were appended descriptions in several languages. This Herbal, as she called it, was published in 1739, with 500 figures, and much commended by gardeners and naturalists. One of the friends of Miller, so many years in charge of that garden, was Robert Furber, founder of the Kensington Nursery, and who owned extensive orchards in that district. He prepared a folio of twelve plates, delineating the fruits of the year, and also a small book with remarks on the culture of fruits and flowers, also a brief list of plants for sale, one of the first of the kind; this appeared in 1733. Christopher Gray, of the Fulham Nursery, a receiver of numerous novelties, brought out his catalogue of trees and shrubs in 1740, and the long famous firm of Dickson & Co., nurserymen of Edinburgh, had their first list out a few years later.

It seems odd to us that at Mile End, in Georgian days, were nurseries renowned for their choice exotics, two leading growers being Clements and Gordon. But the place was then a semi-rural suburb, with only scattered houses, and it was a great resort of the citizens on summer evenings. Geraniums and Heaths, also other species now of universal cultivation, had not arrived in Britain. The Camellia did not flower here till 1739, and Mignonette was unknown till 1752. Of the Rose many new varieties had been obtained, but in popularity Carnations and Gillyflowers were its rivals, and the Magnolia was a great favourite, being commonly planted against dwelling houses. To Anemones, Lilies, and Tulips much space was allotted in the gardens of those who liked display, and a writer in the "Connoisseur" cites, as a proof of the taste for Auriculas, that a Mr. Redmond of Islington could get half a guinea each for his new sorts. Horticulture was advanced in this reign by a man who, as a doctor and poet, was made a butt of by the wits of that day—Sir John Hill, who wrote articles upon a variety of popular subjects, and was honoured by the patronage of Lord Bute. That he had an extensive knowledge of botany and gardening is certain, hence by his books and personal influence he helped to diffuse a taste for ornamental plants. He also made our gardeners acquainted with the Linnean system of classification. At Bayswater he had a garden where he cultivated native and foreign species, kept bees also; here he prepared his "Waterdock essence" and "balsam of honey," which he sold with quackish zeal, inconsistent with his character as a man of science. One of his schemes was a sensible one, the formation of botanic gardens in towns, where the plants should all be duly labelled, and lectures given from time to time on the habits and structure of the different groups and orders. His most pretentious work was a system of botany, which ran to twenty-six volumes, and next to this in importance was his "Gardeners' New Kalender," published in 1755. He also published "Eden: A Complete Body of Gardening," a few years later; both had coloured plates. Two of his small works excited a good deal of attention; one of these was a suggestion for raising trees from their leaves, the other was on the methods of producing double and proliferous flowers. One of the accusations brought against him was that he used to visit gardens and then conceal specimens of plants to carry away. His widow issued at Edinburgh in 1779 an account of his life and writings.

Mr. Ord's garden at Parson's Green, which was laid out towards the middle of this century, though not very large, was an object of

interest to all the London gardeners, as being supposed to exhibit all recent improvements. It was remarkable for its trees, containing fine examples of the deciduous Cypress, Willow-leaved Oak, Turkey Hazel, Red Cedar, and a Lombardy Poplar, supposed in 1838 to be the tallest about London. Here also was a curious Moss Rose, which had been layered and made to extend over a space of 47 feet. At Walham Green, adjacent, lived Rocque, an eminent florist, and who made a special study of the grasses suitable for lawns and meadows. His father had a vineyard somewhere at the west of London, and produced wines which Switzer declares were quite equal to the French vintage. Rocque the younger used to sell his mixed Grasses in turf at so much the square foot for gardeners to propagate from. He translated from the Dutch a treatise on the Hyacinth and its cultivation, published in 1755. A notable impulse

Miller commends as yielding the finest fruit in the world. Warner of Rotherhithe produced a new Hamburgh Grape which he named the Gibraltar, and Miller, at Chelsea, gave name to a red Muscadine: he also raised a Black Burgundy of a new kind, from seed.—J. R. S. C.

LOCHNAW CASTLE.

DURING a brief sojourn in the North a short time ago, I paid a visit to the neighbourhood of Stranraer, the principal town of Wigtonshire, near which is situated Lord Stair's beautiful domain of Castle Kennedy. The town stands at the head of Loch Ryan, an almost land-locked piece of water, which affords welcome shelter to many storm-tossed vessels. I started one day for a drive along the southern shore of the Loch, the



FIG. 66.—LOCHNAW CASTLE.

to the cultivation of vegetables was given in Scotland by the failure of the corn crops in 1742, and for a while it seemed as if that part of Britain would surpass the southern division. Lord Kames also led the gentry to relinquish the old and absurd methods of planting shrubs and trees, which the Scotch followed long after they had been dropped in England. He escaped the jocu'ar abuse directed against Lord Townsend, or Turnip Townsend, as he was called, to whom we probably owe it that this vegetable is as popular as it is at this moment. The Turnips described by Miller in his book were only three, none very good, but Townsend obtained from Hanover some excellent samples of seeds, which he distributed freely, grew Turnips largely himself, and removed a prejudice that existed against the plant. But few additions seem to have been made to our vegetables during this reign. Amongst our fruits, Biggs' Nonesuch and Dredge's White Lily are Apples attributed to this period, and a cider kind called the Canfroone. Harrison's Heart Cherry, brought from India, was planted at Kensington in the Royal Garden, and Fairchild produced a small red Nectarine bearing his name, the Newington Early, grown first in Surrey, which

scenery of which is picturesque at all times, but especially so in autumn, when the varying tints of the woods, harvest, pasture fields, and Heather, form a beautiful frame to the blue waters of the Loch. After proceeding four or five miles, I found our vehicle making an ascent along a public road bordered on both sides by plantations, formed to a great extent of the choicest varieties of Conifers. I was charmed with the rich verdure and luxuriance of the trees, which were 30 or 40 feet high, also with the arrangement and style of planting, and it was easy to recognise in it the handiwork of a skilled and enthusiastic arboriculturist. On inquiring from our driver I found the estate was that of Sir Andrew Agnew, Bart., of Lochnaw, who owns an extensive tract of land in this part of the country. I made a call on the gardener, to whom I was personally a stranger, but I was received by him with cheerful courtesy, and shown over the place as far as the time at my disposal permitted. It pleased me much to inspect the beautiful gardens and grounds, and to make the acquaintance of Mr. Scott, the gardener, who in this secluded region has been carrying on his work with taste and skill, and with a devotion which bespeaks genuine interest in his profession. The climate of Lochnaw is very mild, being almost surrounded on two sides by the sea. Fuchsias and many rare and tender exotic plants grow to the size of small trees, which could not

withstand the severest of the winters farther south, with the exception of favourable situations in Cornwall, Devon, and South Wales.

The grounds, which are very extensive, are finely wooded with trees, both native and exotic, amongst which are large numbers of *Abies Douglasi*, *Cryptomeria elegans* and *japonica*, *Cedrus atlantica*, *Deodara*, and *Libani*, *Cupressus Lawsoniana* in a variety of forms, *Thuia gigantea*, *Picea nobilis* and *Nordmanniana*, several varieties of *Retinospora*, *Sequoia sempervirens*, *Wellingtonia gigantea*, &c. From the lodge nearest to Stranraer a carriage drive of about a mile in length, nearly in a straight line, leads up to the castle. The road is neatly kept, and it is bordered on each side by fine trees of *Araucaria imbricata* 30 feet high. They stand well back from the drive, and are planted at the distance of 40 feet apart, with a broad verge of well-kept grass in front of them. There are many fine drives and walks through the grounds, to some of which the public are allowed free access. The castle itself stands at the head of a loch about 50 or 60 acres in extent, well stocked with large trout, some of which, I was told, weighed 9 lbs., but the average weight is 5 lbs. and 6 lbs. The mansion has a handsome and dignified appearance. Its oldest part is a square battlemented tower, five storeys high, in the Border style of architecture; bears date 1462; the modern portion is built of bluish whinstone, with wings attached, well harmonising with the old. Above the door of the modern building are carved the words, "For every house is builded by some man; but he that built all things is God." The view from the castle across the loch is very picturesque. Immediately adjoining the castle is the flower garden, which is situated on the margin of the loch. It is tastefully laid out in grass, the principal feature being a geometrical design in the centre, planted with the best kinds of bedding plants.

As we learn from a memorial stone of grey granite, which has been erected at one end of it, the flower garden was designed by Lady Louise Agnew, who died in 1888. She was a daughter of the Earl of Gainsborough, and was married to Sir Andrew before his accession to the property in 1849. The design of the flower garden was altered several times by herself, but it has not been changed in any way since her death.

The kitchen garden is 4 acres in extent, and lies to the west of the castle. It is enclosed by high walls, and divided by a central wall running north and south. The walls are covered with fruit trees, and the garden was well cropped with vegetables, but the crops of Apples, Pears, and Plums were very poor this season. The fruit, forcing, and plant houses are all in the kitchen garden. There are three lean-to vineries and a Peach house in one range, good substantial buildings, 16 feet wide, and 14 feet high; a span-roofed greenhouse and Melon house, besides a number of brick pits heated and unheated, and cool frames. The vineries contained good crops of late Grapes; the Peaches were all gathered, but the trees looked clean and healthy, and promised well for a good crop next year.

I regret that time did not permit of my taking notes when visiting this delightful place, and reporting it more fully. In conclusion, I might say Sir Andrew Agnew resides chiefly on his estate, and is much respected by his dependents, and throughout the district.—A. PETTIGREW, *Cardiff*.



CHRYSANTHEMUM JOHN LAMBERT.

As this new incurved Chrysanthemum has been awarded a first-class certificate by the National Society at the Aquarium Show, and named after myself, I think it only fair to me and all other readers of your interesting paper, to know it was John Lambert that was shown in my first prize stand, and not Golden Queen of England as reported in your paper at the Birmingham Show. You kindly mentioned it in your report of the Leicester Show as extra good. It was the same sort as shown at Birmingham. If you will correct this in your next you will oblige—JOHN LAMBERT.

SELECTIONS OF CHRYSANTHEMUMS.

WITH pleasure I give the selections requested by "West Riding, Yorks." A comparison with the lists I gave in the Journal only four years since reveals some startling facts in the Japanese section, as of forty-eight varieties then named but seven are included in the present selection of twenty, which proves what a change has occurred since then, owing to the numerous additions made to this family annually. Belle Paule has deteriorated in a great measure; blooms are generally now found, when staged at all, in the front row, and with very few exceptions nearly white, though some show a few faint lines of purple. For this reason and the extreme height which it grows I have omitted it from the present selection. Apart from the better quality of the blooms of the more recent introductions, the improvement manifest in their habit is a great consideration. Exhibition blooms can be cut from plants which are only 4 feet high, pot included, whereas I have seen Madame C. Audiguier, for instance, reach 13 feet. I have refrained from adding several new sorts which I think will take a high position

when they become better known. I have placed Avalanche at the head of the list, a position which I think it richly merits, as I regard this variety as being the most useful for all purposes in cultivation. I know no other that will produce so many first class blooms from the same number of plants. The habit of growth is all that could be desired. The variety which I think will take a high position is W. W. Coles, which I note obtained the highest award at the Hull Exhibition. I saw this variety last year before it was exhibited, and was much impressed with its appearance.

The revolution in the varieties of incurved is not nearly so great, neither do the varieties appear to become any the worse for keeping, as the old varieties can be seen in as good condition now as they were many years since. During the same space of time five splendid additions have been added to the list of incurved varieties, which are distinct gains. Many of the old varieties still stand near the head of the poll. The "Queen" family is still unrivalled, as proved by the fact that one of its sports (Lord Alcester) takes more honours as premier bloom in the incurved section than all other varieties together. In the present day it is surprising that some exhibitors still grow Guernsey Nugget and Lady Talfourd when so many superior varieties are available. Additions have been made to all the other sections, but not in a marked degree as compared with the Japanese family. The additions to the reflexed section are the least numerous; one or two are good, which I have not added to so small a selection, as they perhaps would not be preferable to existing varieties. The Anemone class is much improved in brightness of colouring as well as in the points of excellence in this section. The main feature in this respect is the very full centres or discs which characterise this section in point of merit. Such sorts as Miss Annie Lowe, Mrs. Judge Benedict, and W. G. Drover are distinct gains to this section, and which much assist in making it justly popular with cultivators and the public alike.

Twenty Japanese.—Avalanche, white; Edwin Molyneux, crimson, gold reverse; Sunflower, yellow; Etoile de Lyon, lilac rose; W. W. Coles, bright red, bronzed gold; Mr. A. H. Neve, silvery blush; Boule d'Or, gold and bronze; Val d'Andorre, chestnut red, shaded orange; Stanstead, white; Jeanne Délaux, dark velvety brown; Mdle. Lacroix, white; Puritan, white, faint blush at the base; Criterion, golden amber; Gloriosum, dull yellow; W. H. Lincoln, light yellow; Mrs. Alpheus Hardy, white, hirsute florets; Madame C. Audiguier, mauve; Madame J. Laing, white, flamed rose; Thunberg, golden yellow; and Mons. Bernard, purple violet.

Twenty Incurved.—Lord Alcester, pale primrose; Empress of India, white; Queen of England, blush; Golden Empress, pale yellow; Golden Queen of England, bronze yellow; Alfred Salter, lilac pink; John Doughty, rosy fawn; Princess of Wales, blush, tinted rose; Mrs. Heale, creamy white; Mrs. Coleman, golden bronze; Miss M. A. Haggas, golden yellow; Violet Tomlin, purple violet; Princess of Teck, blush white; Hero of Stoke Newington, rosy pink; Mrs. Norman Davis, golden yellow; Nil Desperandum, dark orange red; Empress Eugénie, rosy lilac; Lord Walseley, bronze red; Jardin des Plantes, rich golden yellow; Jeanne d'Arc, blush white, tipped rose.

Eight Reflexed.—Cullingfordi, brilliant crimson; Cloth of Gold, light yellow; Golden Christine, light fawn yellow; King of Crimson, rich dark crimson; Mrs. Forsythe, white; Pink Christine, pink; Peach Christine, peach or blush; Putney George, brilliant crimson.

Eight Large-flowered Anemones.—Lady Margaret, white; Miss Annie Lowe, bright yellow guard florets, paler centre; Gluck, golden yellow; Fleur de Marie, white; Mrs. Judge Benedict, rose tinted guard florets, sulphur yellow disc; W. G. Drover, purple crimson; Empress, lilac; J. Thorpe, jun., orange yellow.

Eight Pompons.—Golden Mdle. Marthe, golden yellow; Mdle. Marthe, white; Black Douglas, dark crimson; Mdle. Elise Dordan, lilac pink; President, dark rosy crimson; Prince of Orange, light orange amber; Marabout, white fringed; Nelly Rainford, buff yellow.—E. M.

CHRYSANTHEMUMS FOR EXHIBITION.

By Mr. CHARLES GIBSON.

(Continued from page 444.)

TAKING THE BUD.

THIS is a mystery to a beginner, and requires a good deal of judgment in the experienced. It is difficult to specify exact dates, because varieties differ so much and localities also. Light or clay soils, hill and vale, as well as the part of the country the exhibitor resides in, all affect the time and manner of taking the bud for a given date. Seasons too vary, so that the course one season might have to be altered the next. During the present season many buds showed early in July. These were run on to terminals, were taken the second week in August, and have given fine blooms, where another season, with the terminals later, they would be useless for exhibition. The other buds were taken earlier than usual, but the cool weather we had in August kept them in check, and the blooms are somewhat later than usual. As a rule I commence taking the bud the second week in August, and have generally finished the first week in September. The finest blooms for exhibition are generally obtained from crown buds taken the third week in August, but in the case of Boule d'Or the crown buds can be taken at the end of July, because they require so long a time to expand properly. Terminals run on after the first week in August do not attain exhibition size, consequently may as well be taken for early blooms. Although some of them may be too early for exhibition, a few good blooms are always acceptable for other purposes.

A few additional words will, I hope, enable those unacquainted with the subject to understand what "taking the bud" really means. If the plants have been grown as advised they will be from 18 inches to 3 feet in height at the end of May, according to the varieties. At the end of May and early in June they will be making their first "break," that is, at the top of the plant a bud is formed which stops that growth, and three shoots form. These start away together and make a long or short growth according to the varieties. When the growth of these shoots is completed by the formation of another bud it has to be decided whether this bud shall be reserved, or the plant be allowed to make another growth. This demands an acquaintance with the peculiarities of the varieties. If it is decided to reserve the bud the three shoots around the flower bud are removed as soon as it can be done with safety, leaving only the flower bud. This is called "taking the crown bud." If it is decided that taking this crown bud would be too early or likely to cause deformed flowers, the flower bud is removed with two of the shoots, and the best shoot allowed to make another growth. At the apex of this other buds are formed, the best is preserved, the others are all carefully removed, and this is called "taking the terminal bud." I have found the buds of most incurved varieties to come from the plants not stopped. In the natural break the shoots start evenly together, but the condition of the wood as to firmness influences the artificial break. I once stopped half my plants of incurved varieties to try the system, but the result was so convincing it was never repeated.

Varieties run on to the terminal bud in a sunny position are Barbara, Refulgence, Mabel Ward, Eve, and the Teck family of the incurved, and Grandiflorum of the Japanese. Other terminals, taken in a position not quite so hot, are Comte de Germiny, Stanstead Surprise, M. Lacroix, Étoile de Lyon, Lady Lawrence, Carew Underwood, and Baronne de Prailly of the Japanese, and Jeanne d'Arc incurved. L'Adorable and M. Tarin making short breaks have been taken on the third break. Japanese stand stopping much better than incurved. Before we had better varieties Elaine, Bertie Rendatler, and Thunberg were obtained by stopping in April. Edwin Molyneux and Mrs. F. Jameson amongst the newer varieties have come well from plants that have been stopped. In these cases early blooms lose their freshness, and terminals lack size and substance, but by stopping them they are obtained the right time for exhibition.

HOUSING THE PLANTS.

Attend to this in good time, removing under cover the earliest as soon as they show their florets, and following up the others every alternate day until the stock is housed. Large numbers of early blooms damp through the large buds becoming saturated before being housed. The first week in October is the time most of the plants are housed, unless the weather is threatening, when they are housed at once, so as not to be taken by surprise.

KEEPING THE BLOOMS.

This is sure to engage the attention of exhibitors. I have tried various ways, but have found no plan better than allowing them to remain on the plant. The early ones are placed in one house, or at the end of a house by themselves, the temperature cool and the house airy, with enough warmth in the pipes to evaporate undue moisture. When the blooms are nearly developed a piece of tiffany is fixed over the glass to prevent the cold and moist air injuriously affecting them by night and the sun injuring them by day. Blooms kept in this manner have often surprised me in the length of time they have kept for exhibition.

DAMPING.

The early buds are most subject to "damping." Heavy winds and rains battering the large buds before they are housed is often the cause. Continued foggy weather and too much artificial manure cause the lower florets to decay quickly. Low night temperature with much moisture followed by bright sunny days cause hundreds of blooms to be lost in a few hours. The best preventive is to have a small fire constantly, except on sunny days, with ventilation more or less at all times except during heavy fog. Where the temperature is not allowed to fluctuate too much, the blooms keep much cleaner and preserve their freshness for a long time. Some varieties are more subject to damp than others, and should be accorded the driest position in the house. Empress of India, Queen of England, Lady Hardinge, Mrs. W. Shipman, Mdle. Lacroix, Fernand Feral, and Madame C. Audiguier are with me the most subject to damp. Prince Alfred and Lord Wolseley should also be placed in as dry a position as possible, being early to bloom, and likely to go quickly at the lower part of the bloom.

INSECTS AND DISEASES.

Numerous insects attack the plants in various stages of their growth, but they can be generally overcome with timely attention. They are subject to green fly in all stages of their growth, but these are readily destroyed by dusting with tobacco powder. Immediately the plants are housed they should be well fumigated to destroy any aphides secreting themselves around the buds. Blooms stand fumigation so well I have never found any injury arise from it. A maggot attacks the plants in May. It is readily detected by the manner in which it webs the top leaves of the plant together. They should be searched for occasionally and destroyed. Earwigs are troublesome, especially among the blooms. They should be trapped through the summer by bean stalks cut in length and placed among the plants or inverted pots with a little dry moss. The cuckoo spit insect has been unusually prevalent this season, and destroyed many buds; it nips the stem and causes the bloom to heel

over and cease swelling. The only plan I know is to catch them, which is sometimes a troublesome matter, as they are so lively, but their numbers are reduced. When mildew attacks the plants sulphur should be applied, and this immediately arrests it.

PREPARING FOR THE SHOWS.

Where it is intended to exhibit the schedules of the societies must be carefully read and noted, otherwise mistakes readily occur through not meeting the conditions, and lead to disqualification. It is not desirable to send the entries until nearly the time for closing, because many losses of the blooms may occur from various causes, and the exhibitor may be unable to compete in the classes he intended. No more classes should be entered than the exhibitor has every reason to believe he can compete in. I knew one exhibitor who used to enter very early and in more classes than he could fill, and boast of his number of entries. All this entails work on the secretaries to no purpose, and leads the society into additional expense in providing accommodation. Managers of exhibitions should fix their close of entries as late as is consistent with the proper working of the show. Exhibitors are anxious to enter certain classes and are keeping their blooms for it, when perhaps a change to wet and foggy weather ruins a number of the blooms, and if no margin for losses has been allowed for, nothing can be done but cancel some of the entries. Where this does occur it should become more the general rule to give notice to the secretaries the day before the show; or perhaps a clause in the regulations to the effect that a fine would be imposed if notice was not sent would mend matters in the entry for competition.

The Chrysanthemum has given those with an inventive turn of mind scope for using their abilities in discovering aids to the best manner of setting up for exhibition. Many forms of cups and tubes have been brought out to assist the exhibitor to raise his blooms and set them up to best advantage. Holders for tickets with the names of the blooms at the back of the stands seem to be on their trial now. The large varieties of Japanese blooms leave no space for the name to be seen on the board, and unless they are in a conspicuous position the names have to be passed, or the blooms have to be pushed on one side every time we wish to find the name, injuring the blooms and also the effect, as well as taking up a great deal of time, when in a crowded exhibition others are perhaps waiting to get near. Tickets fixed in front of the stands are too low down, and are liable to be unfixed by visitors rubbing against them.

The various requisites for exhibiting should be examined and in readiness. A support from a board, or leaky tubes, or an insufficiency of them, may cause much delay at the last moment. The best way to reach the exhibition, times of trains, &c., should be fixed beforehand, so that when the time arrives for setting up the blooms the whole attention can be given to it, and not divided by matters that should have been seen to before. As a rule the blooms are prepared the day before the exhibition, commencing with the incurved because they take the longest time to prepare. Incurved blooms vary in the length of time they require; if clean and well grown they take a much shorter time than many people imagine. Some seasons the Queen family come with scaly centres, and then they are rougher and take more care. When cutting look carefully over each variety, cut only those that are required, and select solid deep blooms, broad florets and fresh. Two pairs of tweezers are required, one long pair to remove any damaged florets, and deformed ones at the base low down amongst the florets, as if these are not removed it prevents the others going into proper position, leaving hollows and losing the symmetrical proportion which adds so much to the beauty of an incurved bloom. With the short pair arrange the florets in as regular a manner as possible, commencing at the centre of the bloom. Take pains to do it well, as they are much admired, and some that profess to dislike the method must inwardly prefer their appearance.

Japanese blooms are cut in the afternoon of the day before the exhibition. The colours are arranged by day, so that they have the same light as when judged. If arranged in the evening some colours look different. Take Sunflower for instance, which loses its effect at night. Select fresh, large, well-coloured blooms with their centres well up, and as many of the true Japanese as possible when in their best condition; I mean such varieties as Boule d'Or, the Dragon type, Meg Merrilies, Ralph Brocklebank, Stanstead White, &c. Varieties in all classes should be shown in their true character, and distinct where distinctness is required by the schedule. Sports are especially liable to vary, and should only be shown in their true form. Where there is a doubtful bloom it should be left out and a safe one substituted, and not run the risk of being disqualified. In arranging the stands the large blooms should be placed in the back row, the medium in the middle row, and the smaller ones in front; each row should be made level at their top by raising the low one or lowering the high one. All should be well set up from the boards, as they gain much in effect by this method.

An early start should be made on the morning of the exhibition, so that time is given to see that the blooms have travelled safely, and everything ready for the judges at the appointed time. It is the duty of exhibition managers, exhibitors, and judges to be punctual. It is most to the interest of the exhibitors themselves, so that the judges may have the full time allotted to them at their disposal. If shorn of a quarter of the time through the unpunctuality of one or two exhibitors, and there is a large competition, with the prospect of the opening exhibition close at hand, it means hurried work, and hurried work at judging, as at other work, is seldom satisfactory.

THE CHRYSANTHEMUM IN ART.

By Mr. G. C. HAITE, F.L.S., Bedford Park, W.

It has very properly been thought that so important a celebration as the centenary of the introduction of the Chrysanthemum would be incomplete without some reference to its position in the art expression of the country whence it came, a country remarkable for many qualities, but chiefly for the charm of its decorative arts and skilled handiwork; and would also be incomplete without some recognition of its introduction in the ornament of our own manufactures. Although the introduction of the flower may be considered recent, it has of late years become a favourite and prominent *motif* with our art workers; so much so that it must of necessity be associated with the great art revival of the latter part of the Victorian era.

The Committee of the National Chrysanthemum Society in asking me, as a practical worker in applied ornament, to talk to you on this phase of a most fascinating subject, paid me a great compliment, and, as the task was by no means an uncongenial one, I ventured to accept the honour, and shall endeavour to keep the few remarks I propose making as comprehensive and clear as the time at my disposal will allow. I need, therefore, offer no apology for the subject of my address or for its introduction here; I can only regret that it was not undertaken by someone more competent than myself.

It must be clearly understood that my remarks upon the art aspect and adaptation of the Chrysanthemum will be confined exclusively to that branch of art known as the applied or decorative; inasmuch as the selection of this flower for purposes of imitative painting can offer little, if any, food for reflection, seeing that its beauty and variety of form—combined with its richness of colour, would alone be sufficient to recommend it for such purposes. But a flower, or growth, must possess something more than an abstract beauty to take a foremost place in the ornament and history of a people. A flower may be beautiful in itself, and lack the qualities necessary for the purposes of applied art. As an example of this we may take the cultivated Rose, beautiful enough to satisfy the most fastidious taste, and absolutely unequalled in its exquisite colour, range, and subtleness of perfume, and yet can we call to mind a single instance in which it has been successfully treated as a decorative *motif*? On the contrary, it is painful to reflect that the only claim it could possibly advance to artistic utility—save the mark!—would be its frequent recurrence in the crochet and wool-worked table-mats and antimacassars of the last generation; now, let us hope things, I had almost said sins, of the past. The Rose will, of necessity, be associated with the darkest age in the art history of this country. Again, the Dahlia has been developed and cultivated to its full pitch of perfection, possibly, but has left no record, at least of a creditable kind, upon our every-day art. The Tulip was at one period more than popular. It became a fashionable craze—in some cases almost criminal in its consequences—riding foremost in the gilded chariot of fashion, and yet, as regards the influence upon taste and art, we meet with it chiefly in gaudy chintzes or abominable specimens of naturalistic wood-carving.

I might give further instances of a like nature, but these will suffice to justify the assertion that a flower may be beautiful in itself, but yet totally unfit for the purposes of applied art. Something more than culture and development, something more than the caprice of fashion, something more even than abstract beauty, gratifying though it be to sight and smell, is necessary for a growth to be exalted and to live for all time as a characteristic feature in a nation's ornament. The Lotus, the Iris, the Tudor Rose, the Ivy, and the Chrysanthemum not least, illustrate and prove this. Without prejudice I think I am justified in saying that in only too many instances, although the selection of a plant for cultivation has resulted in finer flower heads and more luxuriant growth to the gain of our gardens—all this has only been obtained by the elimination of those very points and characteristics which made it acceptable to the artistic eye, and possible artistic adaptation. But this has not been so in the culture and wonderful development of the Chrysanthemum. Never, perhaps, in the history of the world—certainly there is no parallel in our own memories—has art been so indebted to the florist as she is to-day for the development of this wonderful flower.

It must be confessed that the florists and chief growers possessed, and it is said still possess, a strong predilection for the type known as "incurved." That is a form which, viewing the flower from its artistic aspect, does not commend itself to artists, while the definition of its ball-like form restricts its use. But to their credit be it said the growers have been equally devoted and enthusiastic in their culture of the reflexed, the Anemone-flowered, the Pompon, and, as they are called, the dishevelled Japanese varieties. The last is the dearest to the artistic nature, and is evidently alike the favourite of the ornamentist at home and in far Japan.

As I shall have occasion to use the words conventional and conventionalism somewhat frequently, this may be a not altogether unfitting opportunity to attempt some clear definition of this much-abused, because misunderstood, term. To many, not only of the general public, but also to our art workers, it is understood to simply mean the flattening out of an object. South Kensington is supposed to have originated and propagated this idea. Certainly the development is responsible for a multitude of drawings in which this definition has been practically shown. It may also claim the honour of instituting the exact turnover, and the sub-division of the circle, the result of which is a lifeless and irritating repetition of aimless form, conventional indeed, but not in the sense desired. This convenient word is, moreover, relied upon by many as an excuse for want of truth, consequent upon

superficial observation. As I understand the real meaning of the word, conventionalism is the principle of selection, the discerning and adapting of the most salient characteristics of a flower, so that in the best conventionalised ornament the growth may never be an outrage upon Nature, but rather a clearer delineation of the same. This playful rendering of a spray of Chrysanthemums is designed to suggest a stork on the wing, and demonstrates how possible it is to realise the true growth and characteristics of Nature for a definite purpose, and further that conventional treatment does not necessarily restrict invention or fancy. The effect is so natural that we can discern but little difference at the first glance from a drawing of the actual bird. Indeed, we can quite imagine a spray of the flower growing by a freak of Nature in this manner. I am aware that this question of Nature in art is but a small factor, inasmuch as a growth may be conventionalised, as in much of the Chinese work, beyond recognition. Yet it by no means follows that it is not a good ornament, and fit for the purpose, but it at least lacks that interest which association always gives, and therefore I take it there is a distinct loss. But for a plant that is to appeal to as such to be delineated false in growth, and excused on the plea of conventionalism, is nothing less than an outrage on the principles of art and our common sense.

It is important to observe that the flower and foliage growths have stamped a nation's ornament with individuality and character for all time, are invariably conventional in treatment. We have no instance of a naturalistic treatment possessed of sufficient vitality to live, much less to form a vowel in the grammar of decorative art. The Lotus of Egypt in its conventional rendering alone would serve to prove the high civilisation and antiquity of Egypt, and to this day it stands the finest instance of conventionalism known, and yet in no way does it outrage true growth. The Lily of France, in its conventional treatment, is destined to immortality as the Fleur de Lis, is a rendering of the Iris, while the selection and use of the Tudor Rose of England stamps the best period of our own art, although it existed in its adopted form long before that date. And with the true instincts of an artistic people, we find the Chrysanthemum is rendered by the Japanese more or less conventionally, according to the purpose or material for which it is selected. Everyone knows that the Chrysanthemum is the imperial badge of Japan, but it may not be generally known that it shares this honour with the *Paulownia imperialis*, a growth equally capable of conventional expression and recalling in its form our purple Foxglove.

We find the simplest expression and severest form of the Chrysanthemum—as we might expect—in its adaptation to heraldry, as the imperial badge, in which it is shown as a simple rosette or Daisy composed of sixteen petals. Even in the later adaptation of the flower for postage stamps this simple and severe form was adopted. We may rest assured that its selection for this important function was not mere haphazard, prompted by personal caprice, or even some incident connected with the flower, but rather because it had within itself possibilities of a simple and satisfactory conventional treatment. The conventional rendering of an object is not due to either tradition or what is called taste, it but is the outcome of necessity, and simply means that the material to be decorated delineated the *motif* and method of treatment. Returning to its use as a badge. The reason for this simple expression is at once apparent first, that it might be clearly seen, and from a distance, without possibility of confusion, and equally important that it might be capable of execution upon and in every kind of material. Hence we see it in the hardest alloy for weapons and armour; carved in metal and crystal; beaten in high and low relief in brass; carved in wood and ivory; woven in fabric of dress and banner, and raised in lacquer, simple but unmistakeable. But apart from being the badge of the Royal House of Japan, the flower is evidently dear to the people for its beauty alone. It appeals to them in its general adaptability for the ornamentation of their domestic surroundings, while it is by no means uncommon, I gather from one of those delightful letters from Sir Edwin Arnold, which appear from time to time, to find the Japs naming their daughters after these favourite flowers, O-Kiku-Sau, the Hon. Miss Chrysanthemum, in much the same way that we call our girls Rose, Violet, Lily, &c.

The Chrysanthemum is the leading, if not the most characteristic, feature in the ornament of this nation, who have taught us so much, and who are destined to still further revolutionise many of the ideas connected with applied ornament of the Western world—a nation whose history is so interwoven with the adaptation of this beautiful flower that I venture to say Japan is better known to the multitude to-day by the flower of her choice than by her civilisation of thousands of years, or by the character and history of her patient and talented people. As I have before said, we find it used in every imaginable way, from the severest possible form, as shown in the Imperial Badge, to the naturalistic paintings on silk or paper or the fanciful expression of form. It would be nothing short of a calamity to lose the varied expression of this flower, while it would be difficult to imagine the art of Japan without it. It stamps the native work with individuality, and in conjunction with the Bamboo serves to typify this art.

It is not possible to more than briefly allude to the extensive use made of the flower by designers and ornamentists in our own decorations and manufactures. Attention should be directed to the matter, inasmuch as I am compelled to admit that the flower is often either misapplied or adapted without sufficient simplification. As pointed out, Nature has done much of the designer's work, and we are too apt to rely upon this fact, utilising the flower as it is, instead of making it consistent with our requirements. As an instance, we not infrequently see in repoussé, pointed-petalled blossoms, selected for high relief and

attempts to render shapeless outlines, a method of expression suitable only for imitative painting. In woven fabrics, too, we see the flower over-burdened with petals and necessarily confused in form. The same attempts at naturalism are to be found in wood carving, wall-papers, &c. We should do well to study the methods of Japanese adaptation, not necessarily to copy, but for the principles involved, and we should more conscientiously study the flower itself, and not accept as accomplished that which Nature has still reserved for us to do, in the doing of which we invest the growth with a human interest. These conditions pre-suppose no arbitrary restrictions, inasmuch as the probabilities of variety are practically endless. The flower as such is perfect. It is left for the genius of man to make it equally so for his defined purpose. For the very reason that it is so decorative in itself we should resist the desire for imitative realism. The Japanese, to their credit and glory as an artistic nation, never fall into this mistake. If they use the flower as a *motif* for chasing in hard metals, as steel, alloys, iron, &c., they select blooms simple and defined in form. On the other hand, in chasing in soft metal—gold or silver—or carving in soft woods, they choose blooms, the beauties of which are better displayed in a more modelled form. In metal work the treatment may be convex or concave.

In their paintings we at once perceive that they allow themselves a wider selection, almost every kind and variety of flower finding recognition with greater latitude in treatment. Foreshortening, interlacing, and intricate arrangements are indulged in, and what may be termed an intermediate course is taken in their pottery and fabrics. Having taken a general though hasty view of the subject it may be profitable to ask ourselves why this flower over and above its claim to beauty, was and is so readily selected as a decorative *motif*? The fact of it being the Imperial Badge of a distant and still almost unknown people can have had with us, at least, little influence, however much it may have affected the Japs themselves. It rests its claim for admiration and selection upon a beauty of form as remarkable as it is varied upon a wide colour range, and a growth strong yet graceful, and a foliage no less beautiful than the blossom.

Many a flower has been grown in obedience to the demands of the fashion of the day, and their contributions to the art would have been of a negative nature. But in the flower we have met to honour we find it not only adapted to a variety of treatments consistent with the principles of applied ornament, but that, too, with little, and in many cases no alteration. Nature, indeed, seems to have been so enamoured of her production that she was half tempted to turn artist. Finally, we may all concede that we owe it a deep debt of gratitude, for it has made bright a period of our year that heretofore had been dull and flowerless. No longer can the poet sing—

"No warmth, no cheerfulness, no healthful ease,
No comfortable feel in any member;
No shade or shine, no butterflies, no bees,
No fruits, no flowers, no leaves, no birds—
November!"

LETTUCES.

I OBSERVED (page 470) a note by "B.," in which he seems to impugn my veracity in regard to Blond Blockhead Lettuce which I received from MM. Vilmorin of Paris. I am always exceedingly careful in any statements I venture to make, and enclose for your satisfaction page 20 of MM. Vilmorin's wholesale catalogue for the current year, in which you will find both Blond Blockhead and Brown Blockhead quoted. So much for the catalogue. As to the seed, I herewith enclose the original packet with some of the seed, which I shall be greatly favoured by your forwarding to "B." for his satisfaction, and to enable him to try this first-class Lettuce. I am afraid "B." thought I was the only blockhead in the matter; but although I am painfully conscious of my imperfections I do not like that regrettable fact to be hinted at by others. I quite agree with "B." in his appreciation of Hick's Hardy Cos, which I always sow every autumn for spring cutting, but have never tried it for summer work. Tom Thumb I have never grown. To follow in the lines of "B.," let me add that I received for trial from MM. Vilmorin a long Turnip like an enormous Radish, which was called Extra Early something, but I have unfortunately lost the seed packet. I sowed it in spring, and it produced good quality roots in less time and far superior to Early Milan, which unfortunately goes off so quickly. I do not think Vertus was the name, for that is familiar to me, but I think it had a name with which I was not acquainted.—H. S. EASTY.

[The enclosures have been forwarded to our correspondent as requested.]

CHRYSANTHEMUM SHOWS.

BERKHAMPSTEAD.

THE above Society held their third annual Exhibition in the Town Hall, and though the building has been considerably enlarged since the last show, it was none too large to accommodate the whole of the exhibits, which were brought together in large numbers. The day was fine, and the Hall was crowded with visitors during the afternoon and evening. In the class for twenty-four incurved, distinct, Mr. C. Brown, gardener to R. Henby, Esq., Abbots Langley, was first with a fresh even stand of blooms. For twenty-four Japanese, Mr. G. Sturman of Watford, an amateur grower, who promises to make a formidable competitor,

was easily first with a magnificent stand. Among his best blooms were Etoile de Lyon, E. Molyneux, Sunflower, Boule d'Or, Avalanche, Carew Underwood, very fine; Fimbriatum, Volunteer, a grand bloom, finely coloured; M. Bernard, and Mrs. Beale. Mr. C. Brown was second with a good stand also, among which was one of the finest blooms of Madame C. Audiguier staged this season. For twelve incurved, distinct, Mr. R. B. Lowe, gardener to the Earl Brownlow, was first with good blooms. Mr. Neave, gardener to C. Van Raalte, Esq., was second. For twelve Japanese, distinct, Mr. Neave was first with a fine stand, having a very fine bloom of Golden Dragon. Mr. H. Folkes, gardener to T. F. Halsey, Esq., M.P., was second; T. Kirby, gardener to E. Mawley, Esq., was third.

Miscellaneous groups are always well done here, and Mr. Lowe was well first with a very finely arranged one. Mr. G. Hillier, gardener to H. H. Cooper, Esq., was second with a good group also. The groups of Chrysanthemums, on a space not exceeding 40 feet, made a fine display. Mr. A. B. Higgins, gardener to Mr. A. G. Lucas, was deservedly first with a similar group to the one he had at Watford the Tuesday previous, but better arranged. This consisted of some very fine plants, both of Japanese and incurves. Very fine indeed was Mrs. Alpheus Hardy. Mr. W. Lush, gardener to Mrs. Lionel Lucas, was second; equal third, Mr. H. H. Cooper and Mrs. Bedford, all very good. In the members' class, Mr. W. F. Exler, gardener to Mrs. Oxenham, was first (with blooms somewhat rough) for twenty-four incurves. For twenty-four Japanese, Mr. F. E. Hicks, gardener to Mr. E. J. Pearson, was first with fine blooms. Second, Mr. Kirby; third, Mr. Lowe. Mr. Folkes, Mr. Kirby, and Mr. Bone, gardener to Lord Chesham, were successful in smaller classes.

Table plants, Primulas, and Cyclamens made a good show. Double Primulas, shown by Mr. C. Sims, gardener to T. Gooch, Esq., were splendidly done. Fruit and vegetables were very largely staged, the Grapes were particularly good. For black Grapes Mr. Folkes was first, and for white Grapes Mr. E. J. Pearson, gardener to the Hon. A. Talbot, headed the list. Mr. C. Brown was the most successful with vegetables, showing a fine clean lot. Several very fine honorary exhibits were sent. Mr. Beard, gardener to Mrs. Valpy, Champneys, sent a magnificent group, occupying one end of the large hall. This contained some very choice plants, and was well arranged. Mr. Beard is one of the leading members of the Committee, and very much credit is due to him for lending such a helping hand to the Society. He also staged a large collection of vegetables, and about six dozen cut Chrysanthemums, among them some fine exhibition blooms. Messrs. Lane & Son sent a fine collection of Apples.

Mr. Holloway, the hardworking and painstaking Secretary, with the Committee, are to be congratulated on such a very successful exhibition.

BOLTON.

THE fourth Exhibition took place in the Town Hall, and proved the most successful yet attempted and attracted large numbers of visitors. The Hall, which is one of the finest in the north of England, being crowded, the miscellaneous groups, three in number, being very nicely arranged. Mr. J. Pountain, gardener to Thos Wilkinson, Esq., taking first place; Mr. R. Cockburn, gardener to W. Slater, Esq., second; Mr. Geo. Pearson, gardener to John Heywood, Esq., third. For the group of Chrysanthemums there were four entries and all good, making a very fine show, Mr. J. Wainwright, gardener to E. Cross, Esq., J.P., C.C., being first, Mr. J. Pountain second, Mr. George Pawson third, and Mr. James Taylor, gardener to Mrs. Chas. Taylor, last.

Specimen Chrysanthemum plants were in grand form, those shown by Mr. R. Smith, gardener to Col. Omerod, being especially fine, taking first in six incurved and six Japanese, other exhibitors being Mr. J. Hicks, gardener to Mrs. Haslam, and Mr. J. Pountain.

Cut flowers were well represented. For thirty-six, eighteen incurved and eighteen Japanese, Mr. Joshua Kirkman, gardener to John Stanning, Esq., being first with a grand stand; the eighteen, nine incurved nine Japanese, being taken by Mr. Chas. Jones, gardener to Mrs. Shaw, Mr. J. Wainwright, and Mr. George Corbett, gardener to Arthur Knowles, Esq., coming close behind. Mr. Jones also secured first for twelve incurved, twelve Japanese taken by Mr. Corbett, and twelve miscellaneous by Mr. Wainwright. The amateur classes were well represented, and showed a marked improvement on former years.

HINCKLEY.

THIS, the third annual Exhibition, was in many respects a commendable one. St. George's Hall, Hinckley, the room in which the Show was held, is a very suitable one for such a purpose; sufficiently large, lofty, well lighted, and well fitted, with a raised orchestra at the farther end from the door. The greater portion of the centre of the room, as well as the orchestra, were occupied by groups of miscellaneous plants stove and greenhouse, and Chrysanthemums, not for competition. Across the front of the orchestra were three very respectable groups of Chrysanthemums in competition for the prizes offered.

On a table down the right hand side of the room looking from the orchestra were the cut blooms, and a collection of hardy fruits; and on the opposite side of the room, on another similar table, a number of very good collections of vegetables in trays of six varieties, single dishes, &c. The Committee have this season, for the first time, offered a silver challenge cup value £5 5s., together with three of the N.C.S. medals, and a Centenary medal; but for all this they were disappointed in receiving but a very poor entry list to all the cut flower classes, these

classes unfortunately proving the weakest point in the Show, instead of being, as was hoped they would be, the strongest. The challenge cup was offered for twenty-four blooms, twelve incurved and twelve Japanese—eighteen varieties; but in this class there was only one competitor, he being an amateur grower with very small flowers, especially in his incurved.

It was believed that the fact of the cup having to be won three consecutive times to become the property of the winner, and the money prize with it 10s., being too small, accounted for the lack of entries. A strong effort will be made by the Committee to render this class more attractive next season.

The exhibitors of miscellaneous groups not for competition, were: J. Smith, Esq., Bond Street; Lieut.-Colonel Davis, J.P., Highfield House, Hinckley; M. Foxwell, Esq., Manor House, and B. Hurst & Sons, the Nurseries, Burbage, near Hinckley. The winner of the challenge cup, John Burchall, was also winner of the first prize for group of Chrysanthemums, staging a neat group, lacking diversity of colours.

The Committee and Hon. Sec. are very energetic and hard workers, and will doubtless, as they have affiliated their Society with the N.C.S., soon succeed in their endeavours to make their Show one of the best in the county of Leicester.—W. K.W.

MANCHESTER.

THE annual Exhibition of Chrysanthemums by the above Society was held in the Town Hall, and was in every respect an excellent Show, and is considered to be the best autumn display that has been brought together by this Society.

The principal attraction, or as one visitor puts it, "the great sensations," were arranged upon a continuous table running through the centre of the entire length of the spacious hall, while a table across one end under the orchestra contained a magnificent bank of Carnation Miss Joliffe, exhibited by Mr. J. Jennings, gardener to Leopold de Rothschild, Esq., Leighton Buzzard. These were in themselves a centre of attraction, and were deservedly awarded a special prize. A similar award was also made to Samuel Barlow, Esq., of Stakehill, Castleton, for his splendid collection of about 100 dishes of Apples and Pears, grown in his gardens at Llandudno, and many of which were exhibited recently at the Guildhall, London. Among other exhibits that received special recognition we noticed a stand of a very pretty new seedling Croton, Mrs. Usher, from the gardens of R. E. Warburton, Esq., Arley Hall. Among nurserymen's exhibits, Messrs. Dickson & Robson of Old Millgate, Manchester, had a tastefully arranged bank of Palms, Ericas, Cyclamen, &c., edged with small pots of a pretty and most useful Selaginella Emiliana. Messrs. Dickson, Brown, Tait also put up a beautiful table of fresh healthy plants of similar varieties edged with Maidenhair Ferns; Messrs. Clibran & Sons, Sale, collection of miscellaneous Chrysanthemum blooms, some dozens of well finished blooms of Etoile de Lyon were much admired; while the Home for Flowers was represented by a table of splendid trusses of popular winter-flowering Zonal Pelargoniums of all shades, the whites being specially noticed; Agnes, Sir Percival, and Swanley White were some of the best.

Apples and Pears were largely exhibited by the following firms:—Richard Smith & Co., Worcester; Messrs. Caldwell & Sons, Knutsford; Clibran & Sons, Manchester.

Cut Blooms were superior in a few classes to any exhibits of former years. The principal class for forty-eight blooms in thirty-six varieties was secured by Mr. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, with well finished flowers. Among his best were Lord Alcester, Golden Empress, John Lambert, Empress of India, Miss M. Haggas, Alfred Salter, &c. Japanese.—Ralph Brocklebank, Mrs. Wheeler, Jeanne Délaux, Avalanche, and Meg Merrilies. We failed to find the second prize stand in the above class. For twenty-four Japanese there was good competition, and some remarkably well finished blooms of good depth. First prize, Mr. Kirkman, gardener to J. Stan-ning, Esq., Broadfield, Leyland, Preston, a new exhibitor, and one who is certain to be heard of again, judging from the excellence of his blooms, both in Japanese and incurved. Mr. Kirkman has been a successful exhibitor for several years at Chorley and Bolton, and with the advanced position of his blooms at Manchester we hope to hear of him among the best growers of the day. His best were Etoile de Lyon, E. Molyneux, Golden Dragon, M. J. Pigny, Carew Underwood, Criterion, Avalanche, Pelican, Ralph Brocklebank, and Baronne de Prailly, all excellent. Second prize, J. Tompkinson, Esq., Wellington Hall, Tarporey. Third, J. Lamb, Esq., Renwood House, Bowden. Equal third, A. Heine, Esq.

For twenty-four incurved A. Heine, Esq., Fallowfield, won first honours with a good stand of blooms, his best being Prince of Wales, Alfred Salter, Queen of England, Empress of India, Golden Empress, Miss Tomlin, Jeanne d'Arc, &c. Second, J. Tomkinson, Esq., with a nice lot. Lord Alcester, Miss V. Tomlin, Empress of India, Golden Empress, Mrs. Haggas, Jeanne d'Arc. For twelve Japanese Mr. Kirkman was ahead of his competitors with similar blooms to those in his twenty-four stand. Second, J. Tomkinson, Esq. Third, A. Heine, Esq. For twelve incurved Mr. Kirkman took first honours, with splendid flowers of the usual kinds. Second, A. Heine, Esq. For thirty-six miscellaneous blooms there was close competition. First prize fell to T. F. Waters, Esq., Bonney Villa, Withington. Second, S. T. Whitehead, Esq., Burton Close, Bakewell. Equal third, Earl of Harrington, and J. Lamb, Esq., Renwood House. For three hand bouquets Mr. John Mossley, nurseryman, Halliwell. One hand.—First, Mr. John Mossley.

Second, James Brown, Esq., Longfield, Heaton, Mersey. Third, Miss Lord, Oakleigh.

For nine large flowered Chrysanthemums in pots. First, W. Leak, Esq., Demesne Road, Mossdale. For six Pompons in pots. First, R. Hardwick, Esq. Second, S. Bles, Esq. For six Japanese in pots. First, M. S. Bles, Esq., Broughton Park. Second, R. Hardwick, Esq., Ashton-on-Mersey. Third, C. Chorlton, Esq.

There appears to be entire absence of gardeners' names upon the prize cards. Surely this is scarcely just to those who toil many hours for weeks previous to a Show, to the sacrifice of rest much needed, and possibly travel a long journey at night in order to be early on the morning of the Show, and after the awards are made surprised to find their names are not associated with a hard-earned honour. If this is, as I believe it to be, an exception to the general rule, I think the authorities need a reminder.—P.

YORK.

THIS Show was considered by those who have seen previous ones held in this Cathedral city to be the best of the whole series since the commencement in 1880. It was a remarkably fine display in every department, and keen competition was the invariable rule. Held, as it is, in the capacious building of the Exhibition, the exhibits were seen to the very best advantage, with plenty of space for the company present to view the products with comfort. The plant classes were well filled in nearly every case, and many good examples were not in the awards at all. The best groups were arranged in circles, in which manner they were seen from several points with equally good effect. That from Mr. McIntosh, gardener to J. T. Hingston, Esq., Clifton, York, was placed first, winning the cup and cash prize; from summit to base it was a good arrangement. The second prize went to a group somewhat after the same style. For a semicircular group Mr. Everard, gardener to Mrs. Gutch, Holgate Lodge, York, was first, taking also the N.C.S. Centenary medal. Mr. Everard also showed well in the plant classes, being placed first for four incurved plants with Pink Perfection, Prince Alfred, Lord Wolseley, and Jardin des Plantes. First also for two plants of Japanese with Val d'Andorre and Mdle. Lacroix, and first for a specimen with Edwin Molyneux. Mr. Smith, Norwood Nursery, Beverley, was first for four Japanese with plants profusely flowered of Val d'Andorre, Madame de Sevin, Mdle. Lacroix, and Dr. Macary. He also took first for four well-grown Pompons. Mr. Veat, gardener to Miss Steward, won first for reflexed varieties, showing the forms of Christine in good condition. Table plants were present in large numbers, and suited in most cases for the purposes intended.

The cut bloom classes excited a great deal of interest, some very fine examples being staged. In the premier class for thirty-six, equal of incurved and Japanese, in twenty-four varieties, Mr. Folkard, gardener to Sir James Walker, Bart., was placed first, taking the special prize of plate and money prize also. His blooms were.—Incurved, back row: Empress of India, A. Salter, Lord Alcester, Queen of England, Golden Empress, Empress of India. Middle row: Violet Tomlin, Mrs. Heale, Princess of Wales, Miss Haggas, Violet Tomlin, Princess of Wales. Front row: Lady Hardinge, Jardin des Plantes, Mrs. Heale, Cherub, Princess Teck, Miss Haggas. Japanese, back row: Etoile de Lyon, Boule d'Or, Avalanche, Boule d'Or, Edwin Molyneux, Etoile de Lyon. Middle row: Mrs. J. Laing, Stanstead White, Edwin Molyneux, Mrs. J. Laing, Condor, Madame Baco. Front row: Condor, Puritan, Coronet, Avalanche, Jeanne d'Arc, Sunflower. The Japanese in this lot were very bright, and the incurved of superior finish. Mr. Goodacre, gardener to Earl of Harrington, Elvaston, Derby, took the second prize. Mr. Folkard was also a good first for twenty-four blooms, equal numbers of Japanese and incurved, showing many superior blooms in both stands, winning also for twelve incurved blooms. For twelve Japanese, Mr. Short, gardener to A. Pease, Esq., M.P., Darlington, was placed first in a close competition; a bloom of Mrs. E. J. Clarke in this stand was very fine. With twelve Anemone flowered Mr. Midgley, gardener to J. H. Mason, Esq., Bingley, was to the front with an even stand of flowers. The best were Fabian de Mediana, Sabine, J. Marty, Lady Margaret, Minnie Chate, and Madame R. Owen—a good class. For reflexed blooms Mr. Short again won with capital flowers of Cullingfordi, Chevalier Domage, Peach Christine, Irene, King of Crimson, and Dr. Sharpe. The class for six Japanese blooms, one variety, was well filled, Avalanche being awarded both first and second prizes, the best coming from Mr. Finlay, gardener to Mrs. Proud, Darlington. Etoile de Lyon was also staged in good condition.

Bouquets were present in numbers, those of Chrysanthemums only being most conspicuous. The best came from Mr. Battensby, Blaydon-on-Tyne. Mixed cut flowers were shown well, especially so those from Mr. Letts, gardener to Earl of Zetland, Aske Hall; Lapagerias, Ixoras, Dipladenias, and several Orchids would in this lot have been hard to beat. For an epergne arrangement the first again went to Mr. Battensby, whose choice of flower was good, but too many were used at the base.

Mr. Letts showed a most superior set of half a dozen bunches of Grapes, winning the special prize in the form of a silver cup, also the cash prize with it. Barbarossa, very fine, Alicante and Muscat, both good, were the three sorts. Those from Mr. Goodacre took the second prize; these bunches had, some at least, been shown before and did not therefore compare so favourably with the first prize exhibit. Mr. Dawes, gardener to the Hon. Mrs. Ingram, Temple Newsham, Leeds, was a good first for two bunches of any black kind. Pears were exhibited best by

Mr. Hare, gardener to R. H. C. Neville, Esq., Grantham, who had Van Mons Léon Leclerc, Beurré Diel, Beurré Superfin, and Doyenné du Comice in good condition, and by Mr. Cuckney, gardener to Sir R. J. Musgrave, Bart., Eden Hall, Cumberland; Glou Morceau, Marie Louise, Louise Bonne, Josephine de Malines, Passe Colmar and Nouveau Poiteau were the best in this lot, both collections took the first prizes in their respective classes. Vegetables were provided for by several classes for collections and for single dishes, the produce staged being of superior quality. Miscellaneous collections of Apples from Messrs. Backhouse and Son, York Nurseries, who staged nearly eighty dishes, and from Mr. Watkins of Hereford, whose fruit was remarkably well coloured.

Mr. Lazenby, the courteous Secretary, and his Committee deserve a word of praise for their successful labours on this and former occasions.

SALISBURY.

THE Wilts Horticultural Society held its annual Exhibition of Chrysanthemums, fruits, and flowers in the County Hall, and it was one of the best Shows of the kind held by the Society, and the Committee, of which the Mayor of the City is Chairman, and its able and courteous Hon. Secretary (Mr. W. H. Williams), are to be congratulated upon the smooth and highly satisfactory manner in which the details of the Show were arranged and carried out. Three years ago through the influence and energy of Dr. Coates, Salisbury, four challenge cups were subscribed to and offered, together with a small money prize, to be competed for, the conditions being that the cup should be won three years in succession before becoming the property of any competitor. The trophies having been won the two previous years by the same exhibitors great interest was therefore evinced by the citizens of Salisbury and exhibitors generally as to the chances of cups changing hands or becoming the final property of the holders of them during the two past years, which, except in one instance, is what happened.

Groups.—Two classes were provided for groups of Chrysanthemums arranged for effect and one for miscellaneous plants in a semicircular space of 10 feet in diameter by 6 feet in the open classes; 8 feet by 5 feet in the amateurs' class. Four good groups were arranged in competition for the 10-guinea challenge cup. First, Mr. Frank Pearce, High Street, Salisbury, his plants being furnished with healthy foliage down to the pots, and the flowers large, fresh, and well selected, and intermixed as regards colour, the whole being edged by small plants of Ferns. Mr. L. Brown, Portland House, Salisbury (who won the cup the two previous years) was second; and Mr. A. Robey, gardener to Captain Greenwood, Harnham Cliff, Salisbury, was an excellent third. Although this was an open class Mr. Robey was the only gardener showing in it. Dr. Coates was easily first for a tastefully arranged group of miscellaneous plants set in a groundwork of Maidenhair Fern (*Adiantum cuneatum*) and *Selaginella* of the *Wildenovi* type, the outer circle consisting of *Panicum variegatum* and *Isolepis gracilis* arranged alternately. The dot plants consisted of Palms, Crotons, *Lælia anceps*, *Oncidium tigrinum*, *O. crispum*, *O. Forbesi*, *Cattleya Bowringiana*, *C. marginata*, *Odontoglossum crispum*, &c.

In the class confined to amateurs Mr. Chas. Haskins, Poultry Cross, Salisbury, was a capital first, thereby winning the 5-guinea cup three years in succession. His plants were well grown, and the blooms large, solid, and beautifully fresh. Mr. Witham Pearce, New Street, Salisbury, was a creditable second. There were only two entries in this class also. Four classes were devoted to specimen plants of the Chrysanthemum, but, excepting in the class for trained specimens, nothing worthy of note was staged. Mr. Kains, Winchester, was first for a trained specimen, staging a well trained profusely flowered plant of *Bertha Flight*; Mr. H. Pearce and Mr. L. Brown following in that order with good exhibits.

Cut Blooms.—These were shown well in the open classes. Three stands of twenty-four blooms each were staged in competition for the ten guinea challenge cup, which was easily won for the third time by Mr. H. W. Ward, gardener to the Earl of Radnor, Longford Castle, Salisbury, who staged *Boule d'Or* (two), *Avalanche* (two), *Triomphe de la Rue des Châlets*, *Japonais*, *Fernand Feral*, and *Meg Merrilies* in the back row; *Lord Alcester* (two), *Bronze Queen*, *Empress of India* (two), *Miss M. A. Haggas*, *Cherub* (two) in the middle row; *Barbara*, *Eve* (two), *Charles Gibson*, *Mrs. Heale*, *Alfred Salter*, *Empress Eugénie*, and *Hero of Stoke Newington* in the front row, all being substantial, fresh, well-matched blooms. Mr. Mann, gardener, Leighton House, Westbury, was second, his best blooms being *Etoile de Lyon* and *Edwin Molyneux*. Mr. Gill, gardener to Earl Nelson, Trafalgar Park, Salisbury, was a creditable third. Several good stands of a dozen blooms of incurved of not less than eight varieties were staged. Mr. Neville, gardener to Mr. Flight, Twyford, Winchester, was first, showing fine blooms of *Princess of Wales* (three), *Lord Alcester*, *Lady Dorothy*, *John Salter*, *Empress Eugénie*, *Violet Tomlin*, *Mrs. Coleman*, *Hero of Stoke Newington*, and *Nil Desperandum*. Mr. Inglefield, gardener to Sir John Kelk, Bart., Tedworth House, Marlborough, was a good second, his blooms of *Golden Empress* being exceptionally fine. Mr. W. Robinson, gardener to Lord Justice Lopes, Westbury, was a close third. In the corresponding class for a like number of Japanese, Mr. W. Robinson was first with finely coloured fresh blooms (back row) of *Edwin Molyneux* (two), *Condor*, *Etoile de Lyon*. Middle row: *Boule d'Or* (two), *Etoile de Lyon*, *Condor*. Front row: *Mons. Bernard*, *Sunflower*, *Sarah Owen*, and *Mdlle. Lacroix*. Mr. Neville was a good second, and Mr. Inglefield a close third. Mr. Neville had the best stand of reflexed, staging large fresh blooms of *Cullingfordi*, *Cloth of Gold*, *Golden Christine* (two), *White Christine*

(three), *Pink Christine*, *Peach Christine*, *King of the Crimsons*, &c. Mr. W. Robinson and Mr. Ward being second and third in that order. Mr. Neville was again to the front for a stand of *Anemones*, with a very fine lot of blooms, *Jeanne Marty* (two), *Fabian de Mediana*, *Empress*, *Ratapoil*, *Miss Annie Lowe*, *Lady Margaret*, *Minnie Chatc*, *Souvenir de L'Ardenne*, &c. Mr. Tucker, gardener to Major W. P. Clarke, Bellfield, Trowbridge, was second, and Mr. W. Robinson was third, all staging good all-round blooms. All the above classes were well filled.

Amateurs.—Mr. Chaloner Shenton, Winchester, won the 5-guinea cup for the third time with a stand of eighteen blooms of not less than twelve varieties, staging *Etoile de Lyon* (four), *Boule d'Or* (two), *Prince Alfred*, *Barbara*, *Jeanne d'Arc*, *Lord Wolseley*, *Prince of Wales*, *Peach Christine* (two), &c. Mr. W. Follen, Codford, near Warminster, was second, and Mr. Botten, Basingstoke, third. The last named exhibitor was first for twelve blooms, not less than six varieties, showing, among others, good *Etoile de Lyon*, *Edwin Molyneux*, *C. Audiguier*. Mr. M. S. Melliuch, Exeter, was second, and Mr. John Kaines, Winchester, third.

The ladies' classes were well represented by the Misses Agnes Flight; Lovibond, 2, St. Anne Street, Salisbury; Mattie Brown, Salisbury; Mathews, Avonbourne, Salisbury; all staging artistic arrangements.

Fruit.—This made a fairly good display. Three collections of six kinds were staged by Messrs. Ward, Warden (Clarendon Park, Salisbury), and Evans, Melchet Court, Romsey, and to whom the prizes were awarded in that order. The Longford fruit consisted of well-coloured *Gros Guillaume* and *Muscat of Alexandria* Grapes, *Queen Pine*, *Longford Gem Melon*, *Glou Morceau Pear*, and *Court Pendu Plat Apples*. Grapes.—Mr. Warden was first in the any other black than *Alicante* with shapely well-coloured bunches of *Gros Colman*; Mr. Chalk, Westwood, Salisbury, being second with good *Lady Downe's*. Mr. Chalk was also first for *Alicante* and *Muscat of Alexandria* with good exhibits, being closely followed in each case by Mr. Ward, who was first in the any other white class with well-coloured bunches of *Trebbiano*.

Out of seventeen competitors with dessert Apples put up in excellent condition Mr. J. Hall, gardener to S. Montagu, Esq., M.P., Portwood, near Southampton, was first, showing bright clean even fruits of *Harvey's Golden Russet*, *King of the Pippins*, and *Cox's Orange Pippin*; Mr. Pinkney, Mulford Hill, Salisbury, being a good second, showing *Sturmer Pippin*, *Cox's Orange Pippin*, and *Mother Apple*. Mr. Hall was also first for culinary Apples with fine fruits of *Warner's King*, *Alfriston*, and *Flower of Kent*; Mr. Fred Smith, The Palace Gardens, Salisbury, being a capital second, staging large, clear, even, well-coloured fruits of *Warner's King*, *New Hawthornden*, and *Emperor Alexander*. Mr. R. West, gardener to — Fitzwigram, Esq., Downton, was first for Pears, showing fine fruits of *Van Mons Léon Leclerc*, *Beurré Bosc*, and *Doyenné du Comice*; Mr. Hill, Exeter, being second with *Beurré Diel*, *Chaumontel*, and *Huyshe's Victoria*.

Non-competing Exhibits—Messrs. Keynes, Williams, & Co., the well-known nurserymen of Salisbury, decorated the orchestra with a variety of foliage and flowering plants, a large specimen *Orange tree* heavily laden with golden fruit giving a finishing touch to the arrangement, which produced a fine effect when the County Hall was lighted up in the evening. Mr. Curry contributed a good though quiet effect in an arrangement of Ferns and *Selaginellas*; and Mr. Wills, Southampton, staged two specimen plants of Chrysanthemums, which were greatly admired, as also were the examples of *Uvedale's St. Germain*, *Pitmaston Duchesse*, and other Pears staged by Messrs. Warden, Curry, and Hall.

WOKINGHAM.

THE Exhibition of this Society was held in the Drill Hall, and was a great advance on former years. Cut blooms were remarkably good, and competition keen in the leading classes. The arrangements were well carried out by the Hon. Sec., Mr. J. Bedford, and a hardworking Committee. In the class for twelve incurved, distinct, Mr. Lanc, gardener to Miss J. D. Smith, King's Ride, Ascot, was first with an even lot of blooms, very fresh. Back row: *Empress of India*, *Hero of Stoke Newington*, *Lord Alcester*, *Golden Empress*. Second row: *Mrs. Norman Davis*, grand; *Princess of Wales*, *Miss M. A. Haggas*, *John Salter*. Front row: *Lady Dorothy*, *Barbara*, *Princess Teck*, *Cherub*. A very close second was Mr. Allen, gardener to Sir G. Russell, Swallowfield Park. Mr. Allen's blooms were large, but not so fresh as the first prize lot. His stand contained a good *Princess of Wales*, *Lady Dorothy*, and *Lord Alcester*. Third, Mr. Trinder, gardener to Sir H. Mildmay, Bart., Dogmersfield Park. For twelve Japanese, distinct, Mr. Lane was again first with heavy flowers of good colour. Back row: Mr. H. Cannell, *Etoile de Lyon*, *Mrs. H. Cannell*, *Mrs. Wheeler*. Second row: *M. E. A. Carriere*, *Sunflower*, *Mons. Benard*, very fine; *Thunberg*. Front row: *Triomphe de la rue des Châlets*; *A. H. Neve*, good; *Puritan*, *Belle Paule*. Mr. H. Godfrey, gardener to Mrs. Rothery, Ribsden Hill, Bagshot, was second, with blooms but a point or so behind the first, *Stanstead White*, *Thunberg*, *Sunflower*, and *Lady Lawrence*, good, were his best blooms. Mr. Allen was third with heavy flowers, but several lacked freshness. For six reflexed Mr. Allen turned the tables, being first with a bright, even lot of flowers, consisting of *Cloth of Gold*, *Putney George*, *White Christine*, *Golden Christine*, *Peach Christine*, and *Phidias*. Mr. Godfrey was second, with good flowers. Third, Mr. Poppel, gardener to Sir A. E. C. Stephney, Bart., Wood End, Ascot. For twelve large flowered, any variety, Mr. Trinder was first with good Japanese and incurved. Second, Mr. Allen; third, Mr. Lane.

Groups were fairly well represented, and showed improvement. Mr. D. Wilks, gardener to B. E. Cammell, Esq., Folly Court, Wokingham, was first, with an even arrangement; the plants well clothed with foliage. Second, Mr. Bungay, gardener to Sir W. Moreshed, Forest Lodge, Binfield. Third, Mr. Woodgate, gardener to Colonel Harvey, Ambarrow, Sandhurst. Vegetables were well shown for Messrs. Sutton's prizes. Mr. Lane being first. Second, Mr. Bungay. Third, Mr. Hughes, gardener to H. F. de Paravicini, Esq., Heathfield, Bracknell. Some grand Grapes were staged by Mr. Ashman, gardener to C. D. Crews, Esq., Biljingbear Park, Wokingham, who was the only exhibitor. Mr. Ashman was also first for a collection of fruit.

Cottagers' vegetables were very fine, the first prize collection of six varieties being as good as those in the gardeners' class. It is hoped that the Show was well attended, as it certainly deserved to be.

TWICKENHAM.

THE Twickenham Chrysanthemum Show has become of considerable importance in the district, and has taken a place amongst the most interesting of those held around London. The date was this year, however, somewhat against its success, as several large shows had been held in its neighbourhood a week before, and these had attracted some of the best exhibitors of blooms. The Committee had, however, good reason to be satisfied with the results of their efforts, towards which Mr. J. J. G. Pugh (the Hon. Secretary), Mr. Bates, Mr. Freshwater, and others had done so much.

The chief winners can only be noted, and it may be said that the groups arranged for effect were the chief features in the plant classes. These were arranged near the sides of the hall, each in a space of 50 square feet, a belt of Ferns or decorative plants not exceeding 1 foot wide being allowed. The prizes were won by Mr. R. Mitchell, gardener to W. Cunard, Esq., Orleans House, Twickenham; Mr. J. Parsons, gardener to T. Twining, Esq., Perryn House, Twickenham; Mr. A. H. Rickwood, gardener to Dowager Lady Freake, Fulwell Park, Twickenham; Mr. W. Fitzwater, gardener to H. Labouchere, Esq., M.P., Pope's Villa, Twickenham; and Mr. J. Waldie, gardener to J. Bigwood, Esq., M.P., The Lawn, Twickenham, in the order named. Mr. J. Sallows, gardener to Miss Vaughan, Minden Rose, Twickenham also gained a first prize for four trained specimens, capitally grown examples, in his usual style.

The cut blooms were fairly good, especially those from Teddington, which secured nearly all the more important prizes. The following were the successful competitors:—Mr. E. Coombes, gardener to W. Furze, Esq., Roselands, Teddington; Mr. C. J. Waite, gardener to the Hon. W. P. Talbot, Esq.; Mr. J. Parsons; Mr. W. Davies, gardener to J. P. Chappell, Esq., Weir Bank, Teddington; and Mr. C. Garrod, gardener to J. R. Tindale, Esq., Orford Lodge, Twickenham.

Fruit and vegetables, with cottagers' produce, were also well shown, and occupied several rows in the upper part of the Hall.

RUGBY.

THE Rugby Society is making steady progress. Each year some improvement is manifest in the Show, and this season was no exception to the rule, for cut blooms, plants, and groups presented a decided advance. The Committee is a practical one, and the members are fortunate in possessing a most industrious and capable Secretary in Mr. W. Bryant. In the class for thirty-six blooms, eighteen incurved and eighteen Japanese, there was a capital competition, Mr. William Finch, gardener to J. Marriott, Esq., Queen's Road, Coventry, securing first honours with neat well finished bright blooms of the following varieties. Incurved: Jeanne d'Arc, Miss Haggas, Mrs. Heale, Lord Alcester, Hereward, Jardin des Plantes, Empress of India, Empress Eugénie, Princess Beatrice, John Lambert, Princess of Wales, Mrs. Davis, Golden Empress, Violet Tomlin, Hero of Stoke Newington, Lord Wolseley Guernsey Nugget, and Princess of Wales. The Japanese were Madame C. Audiguier, Madame Baco, Gloriosum, Ralph Brocklebank, Avalanche, Sarah Owen, Belle Paule, Mr. Cannell, Etoile de Lyon, Mrs. Cannell, Mrs. Wright, Jeanne Délaux, Boule d'Or, W. G. Drover, Golden Dragon, and three others. The second place was taken by Mr. Harman, gardener to the Right Hon. Earl of Denbigh, Newnham Paddox, Lutterworth, who had creditable blooms, a little too far advanced, otherwise they would have taken higher rank. Messrs. Plowman and Sons, Market Harborough, were third. With both twelve incurved and twelve Japanese Mr. Harman was easily first, being followed by Messrs. Finch and Perkins for the second place; and Messrs. Plowman and Sons for the third. His incurved were Queen of England, Golden Empress, Barbara, Empress of India, Princess of Wales, Mrs. Heale, Alfred Salter, Emily Dale, Miss M. A. Haggas, Lord Alcester, Lord Wolseley, and Jardin des Plantes. The Japanese were Etoile de Lyon, Avalanche, Sunflower, Fair Maid of Guernsey, Madame J. Laing, Madame C. Audiguier, E. Molyneux, Comte de Germiny, Stanstead White, Thunberg, Moonlight, and another. Remaining cut bloom classes were well filled, and the quality generally good.

The chief feature in the plant classes was that for a group arranged for effect, in which Mr. Parker of Rugby won first honours for one of the best groups shown this year at any exhibition, both in the quality of the plants and blooms and the style of arrangement. Other exhibits also showed well, and there were numerous plants. Vegetables were largely shown, and fruit was also represented, together with bouquets, baskets, and miscellaneous plants.



FRUIT FORCING.

PEACHES AND NECTARINES.—*Earliest House.*—There must not be any further delay in putting on the roof lights and closing the house for the fruit to be ripe in May. By what is known as "hard forcing" the very early varieties may be had earlier. Alexander and Waterloo as grown here are not materially different, but in America Alexander, which originated in Illinois State, is "most widely grown as best early variety. Fruit medium to large; greenish white, nearly covered with deep red; flesh firm, juicy and sweet, bears transportation well, pit (stone) partly free." Waterloo originated in New York State, and is described as "medium to large, round, pale green, marbled with red; flesh adhering partly to pit, greenish white, juicy, vinous. Not largely grown." These are very much "mixed" in this country, but there is no question that Alexander as first sent out by Mr. Rivers is the better variety. Early Beatrice closely follows Alexander in ripening, and though smaller is still handsomer, indeed a very pretty fruit of good quality. This, like Alexander and Waterloo, adheres partially to the stone, and it is singular the three varieties were originated at about the same time. Early Rivers is undoubtedly the finest quality early Peach, fruit large and beautiful, pale straw with a blush cheek, very juicy and sweet. Its flesh is very melting and does not bear carriage well, and is a freestone. Well grown it is the most delicious of early Peaches. Hale's Early originated in Ohio, U.S.A., is "medium to large, nearly round; skin greenish, mostly covered and mottled with red when ripe; flesh white, melting, juicy, rich and sweet, freestone." The descriptions are American, which we give, as there is some confusion as regards early Peaches in gardens. Our estimate of the varieties is Alexander, Hale's Early, and Royal George or Stirling Castle as the three best Peaches for early forcing in order of succession, Alexander ripening a month to six weeks in advance of Royal George in the same house, therefore this must be kept in view in starting the trees. It will only be necessary to exclude frost and admit air freely at 50° until the buds commence swelling, when it will be necessary to maintain a temperature of 40° to 45° at night and 50° to 55° by day, admitting air moderately at the latter figure, allowing the temperature to rise to 65° from sun heat, syringing the trees and every available surface morning and afternoon until the bloom buds are showing colour, after which the syringing may be discontinued, but sprinkling the house, walls, and paths may be continued as before. There must be no attempt at a close atmosphere, but allow a little air at the top of the house to lessen the condensation of moisture by the glass. The inside border will require to be supplied with water slightly in advance of the mean temperature of the atmosphere, maintaining the soil in a thoroughly moist state. Borders outside require to have a covering of leaves with a little stable litter to keep the leaves from blowing about, and lights or shutters to throw off the wet are an advantage.

Houses to Afford Ripe Fruit in Late May or Early June.—These should have the lights put on not later than the middle of next month, therefore have any repairs or painting attended to. When the lights are put on no fire heat should be applied except to exclude frost, and the trees not swelling the buds freely the heat may be turned on in the morning if the weather be severe to raise the temperature to 50°, which must not be exceeded in the daytime, syringing the trees in the morning and early afternoon, only using fire heat at night to exclude frost. Admit air at 50° freely whenever the weather admits, as Peaches delight in a well sweetened atmosphere.

Succession Houses.—Proceed with the pruning, thoroughly cleansing the glass and woodwork, whitewashing the walls, dressing the trees with an insecticide. Secure the trees to the trellis, top-dress the borders, and keep the houses cool by ventilating abundantly in mild weather. If the roof lights are moveable by all means remove them, or if off let them remain so until the time arrives for starting the trees. No frost will injure the wood if ripe, and if not thoroughly matured in wood and buds satisfactory crops are not obtainable.

PINES.—Young stock suffer irreparable injury from being kept too close and warm, particularly at this season, the plants being drawn and weakly. Well ventilated span or three-quarter span-roofed pits or small houses properly ventilated and heated are the most suitable for Pine growing. A temperature of 65° at night should not be exceeded, but a mean between that and 55° at night, which, with 65° in the daytime, will keep young stock gently progressing, admitting a little air at the top of the structure at 65°, leaving it on all day, but not to lower the temperature below that point, and when the sun raises the temperature to 75° a free circulation of air should be allowed. Keep the bottom heat steady at 80°, avoiding anything approaching to a damp atmosphere, moderate humidity will suffice. Apply water only when the plants become dry, and then give weak liquid manure. Keep the glass clean, the plants near to it, and allow them plenty of room.

Suckers ready for starting now may be kept until March, and if there is likely to be a scarcity of suckers any recently potted may be retained in 5-inch pots, affording a light position in a moist pit with a slight bottom heat, and a temperature of 55° at night, keeping them

rather dry at the roots. In the fruiting department 65° will be ample at night, 5° lower in the morning in cold weather, 70° to 75° by day. Take every opportunity of collecting leaves whilst dry, Oak and Beech being the best, and whenever a favourable opportunity offers push forward whatever may be necessary in the renewing or augmenting the fermenting beds.

CHERRY HOUSE.—Attention must be given without delay to pruning the trees. Those full grown and regularly stopped during growth will require very little pruning. Shoots not wanted for extension or filling vacant space should be cut back to about an inch from their base or the current year's growth, and the worn-out spurs as well as the decayed may be removed. The terminal shoots in the case of young trees not full-sized must not be shortened unless the extremity of the trellis is reached, and the central shoots of young trees will require to be cut back as may be necessary to originate shoots for filling up the space regularly, care being taken to always prune to a wood bud. Fan training is the most eligible system, particularly suited to the Cherry, as it admits of replacing any branch that may fall a prey to gumming. The house should have a thorough cleansing, the trees being washed with soapy water, 4 ozs. softsoap to a gallon of water, and then dressed with a composition formed of half a pound softsoap to half a gallon of water, half a gallon of tobacco juice, with four parts flowers of sulphur and one part of slaked lime, applying with a brush, being careful not to injure the buds. The lights may be placed on, but the house must be thoroughly ventilated until the time arrives for starting the trees, but it is better if the lights are left off.

CUCUMBERS.—Winter fruiteders are generally too precocious, and unless the plants are extra strong two-thirds at least of the fruit showing should be removed. Remove also the male flowers and tendrils, with any superfluous shoots and bad leaves, but do not stop the growing points too much for the next few weeks, affording water moderately—a supply twice a week will suffice. Plants growing in pots or boxes will require water oftener, with liquid manure occasionally. A night temperature of 65° to 70° , falling to 60° in severe weather, 70° to 75° by day, advancing to 80° or 85° with sun will be suitable. The roots will require moderate earthing from time to time, taking care that the soil has been previously warmed, press it firmly, but not hard. The bottom heat should be kept steady at about 80° . Atmospheric moisture will require to be kept up, but it must be moderate, damping only on bright mornings or early in the afternoon. A night covering over the roof lights of mats, canvas, or frigi domo is highly advantageous, but it must not remain on by day to the exclusion of light, every ray of which the plants must have. Remove old foliage and exhausted growths from the autumn fruiteders, avoiding overcrowding, and especially overcropping. Fertilise the flowers during a continuance of dull weather, and keep water from the young fruit.

STRAWBERRIES IN POTS.—Examine the drainage of pots being introduced to houses for forcing, making sure that it is clear. Remove the loose surface soil, applying a dressing of dried cow dung or horse droppings rubbed fine, adding a twelfth part of steamed bone dust or other approved fertiliser well incorporated, then watering with a rose watering pot, so as to bring it into a moist state, for if placed on dry it will be washed off in watering the plants. The plants may then be placed in position after removing any dead leaves, making sure that there is no deficiency of water at the roots, for the old leaves will not show a deficiency of water until the soil is very much too dry for healthy root action, therefore rap the pots, a practised hand will tell by the sound which plants are needing water. La Grosse Sucrée and Vicomtesse Hericart de Thury are excellent varieties. Noble and Auguste Nicaise may also be introduced, but they should be brought on very gradually.

PLUMS.—These are not often forced. They, however, are amenable to the same treatment as Cherries. In pruning, all last year's growth will need shortening; superfluous shoots may be removed, avoiding having the shoots too thickly placed. Dishes of Plums grown under glass are always welcome at dessert. Early Favourite, Denniston's Superb, De Montfort, Green Gage, Jefferson, Transparent Gage, Kirke's and Coe's Golden Drop are excellent sorts and come in succession. The fan system of training is the best, for Plums are liable to lose the branches. It is necessary that they have the roots restricted to a border of good soil not too extensive, for in wide, deep borders the trees grow too luxuriantly. Trees three or four years trained to walls are the most suitable for planting in houses. Strong loam, preferably marly, is the most suitable soil. Add a sixth of road scrapings and a similar proportion of old mortar rubbish to clayey loam. If the soil be light, add a fourth of clayey marl. A 2-feet depth of border and 1 foot of drainage, secured by a layer of old mortar rubbish, will suit Plums well, feeding the roots by the surface. The house must be light and well ventilated.

KITCHEN GARDEN.

FORCING RHUBARB.—Fortunately our Apple supply is a most abundant one this season, but in many cases it is not, and the demand for fruit or produce to make tarts in the kitchen will induce many to force as much Rhubarb as possible. Strong, healthy roots only should be used, and the whole clump must be introduced without cutting it in any way. Until January the roots cannot be forced freely in the ground, and the best way is to lift them, and if they can be placed in the corner of a Cucumber or Melon pit, where there are pipes to give a bottom heat of 85° , and an air temperature of 65° or 70° , growth will soon appear. We also force a few roots over a flue near the boiler, and have had much good Rhubarb from under the stage in a miscel-

laneous plant-forcing pit. Wherever there is a warm corner a Rhubarb root or two may be introduced, and in all cases the crowns should be covered with a little straw or a layer of leaves. The most acceptable forced Rhubarb is always produced in the dark, and the light should be screened from it as much as possible.

FORCING SEAKALE.—Like Rhubarb this takes from three to five weeks to be ready for use after being introduced to heat. We place a number of roots in 12-inch pots, the crowns only being above the soil. The pots are closely covered and plunged in bottom heat if possible. We also make up a good hotbed in a dark shed, and plunge some of the pots there. The growth is not so rapid as in a heated house, but much good Kale is produced.

MUSTARD AND CRESS.—As the supply of Lettuce, Endive, Cucumbers, and other salads decreases the demand for Mustard and Cress will increase, and they are more easily produced than any other salading. They may be cut in a week or little more after the seed has been sown, and a quantity can be prepared at a short notice. A thin layer of soil is placed in the bottom of some cutting boxes, it is levelled and firmed, and the seed is sown on the surface without covering. Those boxes are then placed in a warm house or any odd corner, and the supply is always certain.

CHICORY.—In this we have another useful winter salad. The seed is sown in May, the plants thinned or transplanted to 8 inches or 10 inches apart, and allowed to grow into strong thick roots. We lift and pot these like the Seakale; then they are plunged in a little bottom heat in a dark atmosphere, and they soon form a large head of pale cream-coloured leaves, which are excellent for salads. If half a dozen potfuls of roots are introduced to heat occasionally during the winter a salad will always be obtainable.

REFUSE HEAPS.—It does not matter what the size of the garden may be, there is always an accumulation of refuse in it, and this is a good time for making up heaps to decay, and a manure will be formed that will be found most valuable when the time comes for planting Potatoes and other root crops. To prepare it more rapidly it should be turned over once a month or so, and if a quantity of soot be mixed in it will improve the mass greatly.

THE BEE-KEEPER.

APIARIAN NOTES.

SINCE November 1st the weather has been changeable—from fine to stormy, with heavy rains. The 13th was a field day for the bees, pollen from three different sources being carried in freely, and in large pellets. Many late-bred bees availed the opportunity of airing themselves, and most hives had their complement. The more opportunities bees have of airing themselves the healthier they are, but unless the temperature is near 50° and the air calm it would be as well they had two months' repose. We have known them sixteen weeks closely confined to their hives without suffering. The heavy rainfalls, with the highly saturated condition of the ground, is against outdoor labour being proceeded with, and a week or two of dry weather would be welcomed alike by gardener and farmer.

MANIPULATING BEES.

Beginners have sometimes too great a desire to manipulate, and very often at a time the most injudicious for the good of the bees and their own safety. The mildest tempered bees can be provoked to sting by untimely and injudicious meddling! Some varieties of bees are more spiteful than others, but none of the varieties can be bred to be harmless. During a honey glut with a little caution supers may be added or removed, the hive opened, and combs examined with impunity. The same may be done with bees heavily fed. But to attempt the opening of hives at a time when the bees have neither been fed nor getting honey they are apt to be furious, and sometimes keep enraged and spiteful for long after, or, in other words, a perfectly peaceable colony of bees may be turned into perfect furies by injudicious and careless handling.

Some writers go so far as to say that there are naturally more vicious bees or colonies than others, and pretend to breed by selection mild tempered bees! I do not agree with that theory. The temper of bees is in a great measure affected by the treatment they receive from their owner, and by his manner and movements amongst them. It is a natural thing for bees to sting in defence of their property, and in defiance to their enemies when in front of their hives, or in their direct flight; and to say bees can be bred so as to be harmless is a sophistical mode of reasoning. Bees have a strong resentment to both men and dogs. From the moment they

are let loose at the Heather bees get frantic, and continue spiteful until the end, unless it may be during a glut of honey, but even then the outgoing bees are to be dreaded. The safest place for the bee-keeper to be when attacked is to creep as close to the side of a hive, with his face turned towards the entrance, and in a crouching position. In that way I have often escaped the fury of the bees and a severe stinging. Sheep move about the hives unconcerned, and are never attacked by bees, and this year a horse depastured amongst my hives, and was never stung, but I was always apprehensive of danger. Some odours have a great influence in raising the anger of bees, and some persons or horses will be attacked when others are unmolested. The dye from some garments, too, rouses the bees to fury and places the wearer in danger.

In addition to being careful not to rouse the bees to anger from the above the beginner should also be very careful by his movements in the apiary, being calm and never in a fighting attitude; and although advised never to interfere with his hives unless when absolutely necessary to do so, the beginner should make himself as familiar with his bees as possible by standing closely to them, drawing his hand frequently, but gently, across the front of the hive and handling it frequently. These movements go a great way to having mild tempered bees, and have the effect of putting them in the best of humour when manipulation takes place.

I never use smoke for quieting bees, as it cannot but be injurious to both bees and honey. Carbolic acid, first used by me as a quieter, and first announced in this Journal, is the safest and best; a little smeared at the entrance first, then as the covers are gradually removed, the top bars are also smeared so as not to smear the bees. They retreat at once from it, and a hum is got up that indicates other business than stinging. A feather with a little on it drives the bees to and from the places wanted.

If that is carefully gone about the beginner, instead of being disgusted at the first, as many are, gains confidence, and his love for the honey gatherers increases, and if at any time thereafter a colony gets enraged he knows how to pacify the most irascible, and he will also learn that bees cannot by any care or selection of breeding become as innocent as lambs, but by careful handling and a proper and judicious demeanour the bee-keeper may work amongst them and be unharmed.

ENEMIES.

Be watchful against the inroads of mice, and be sure the top of the covering of the hive is freely aired and that the roof is watertight. If through late feeding damp is engendered inside it will be advisable to transfer bees and comb into a clean, dry hive. If the floor is non-ventilating and damp it should be removed, substituting a dry one.—A LANARKSHIRE BEE-KEEPER.



TO CORRESPONDENTS

All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

The Two Oldest Fruits (West Riding).—Your request for the "names of the two most ancient fruits" appears rather a curious one. We must refer you to Bible history, and you will perhaps there find that of existing fruits the Apple and the Fig are as old as any.

Pears Shrivelling (Lankhills).—The shrivelled specimens sent have all the appearance of having been gathered before they were sufficiently matured to be removed from the tree, and the necessary maturity is not infrequently retarded by the roots of trees of late varieties penetrating ungenial soil from which little nutriment can be derived that is requisite for perfecting the fruit.

Treatment of Impatiens Hawkeri (B. S. G.).—As the plants are coming into flower give them as light a position in the stove as possible, where they will not be subjected to too much moisture on their foliage from the syringe. Keep young plants in 2 or 3-inch pots close to the glass in a temperature of 60°. When ready the points may be removed to induce them to branch. Under this treatment they will grow strongly and make grand plants for early spring flowering if placed when ready into 5 and 6-inch pots. Use for a compost loam, one-seventh of manure, and a little sand. Press the soil firmly into the pots. This will prevent a soft rapid growth, which results from loose potting, and the use of leaf mould amongst the soil. I. Sultani may also be allowed to come into flower. Pinch later plants for succession, and place sturdy seedlings now in 2-inch into 4-inch pots. If these are grown close to the glass and not too warm they will be very useful when the bulk of the winter flowering plants are over.

Banksia integrifolia (A. M. E.).—Your plant is one of the Banksias, and bears the above name. Some time ago we gave an illustration of the plant, and as the number is now out of print, we reproduce



FIG. 67.—BANKSIA INTEGRIFOLIA (reduced).

it with the description. The Banksias are a peculiar genus of plants, the species forming which contribute largely to the native vegetation of New South Wales and other districts in the great Australian continent. These plants with their relatives the Proteas were at one time much grown in large establishments in England, but of late years they have been almost lost, and are now seldom seen except in botanic gardens. Some are perhaps more strange than beautiful, but there are several which are by no means devoid of attractions, and would add to the interest of many gardens. Of these the Australian Honeysuckle (*Banksia integrifolia*) is especially noteworthy as a free-growing and floriferous plant, which recommendations are not possessed by all its allies. The popular name appears somewhat far-fetched, as are many other popular names; but it does not refer to the habit of the plant as might be supposed, but to the quantity of nectar secreted in the flowers. *Banksia integrifolia* is a shrubby plant, usually of moderate size in cultivation, but attaining much greater dimensions in its native land, where some of its near relatives rise to a height of 50 feet. The flowers are yellowish in a cylindrical head at the ends of the branches. The leaves are narrow and undivided, dark green, and firm in texture. The plant succeeds in light turfy loam and peat, and requires only the temperature of a greenhouse or conservatory, supplying water carefully when not in flower.

Fruitless Trees (Yew).—When we hear that Apple, Pear, and Plum trees are "clothed with short-jointed wood and spurs, yet bear no fruit," we always wish to know if they produce blossom, as if they do, as is usual with trees that form spurs freely, the absence of fruit may be the result of frost or inclement weather in spring, which prevents the

setting of the hoped for crops. If you will inform us on this point as soon as possible we will endeavour to publish your letter, which is of a readable nature, with a reply that will not do any harm if it does no good. We fear the situation is not very favourable, and it may be the varieties are not the best adapted for it. We presume you do not know their names. You have nothing to lose by not planting for another week or two provided the roots of those in the outhouse do not get dry, as they will not if sufficiently covered with damp soil. Three years ago a tradesman ordered a number of trees, some of which he planted immediately on arrival during the first week in December, but frost and snow occurring he was advised to leave the others in the bundles as they arrived from the nursery in a cold shed. He allowed them to remain there for two months, then planted and pruned them one fine day, when the ground was dry on the surface. All these trees grew and have borne fruit, but all the others that he planted in December when the ground was wet (he forgot to prune them) died. We saw all the trees the following year, therefore can vouch for the facts of the case.

Forcing Lilies of the Valley (J. T.).—Any particular kind of soil is not material in the early forcing of these flowers, thousands of them being raised by packing the crowns or clumps in pots or boxes of cocoanut fibre refuse, and forced in pits having bottom heat of 85° to 90°, and top heat ranging from 70° to 80°. The crowns are either covered 2 or 3 inches deep with fibre, or otherwise kept dark and constantly moist. When forced into flower early or before Christmas the crowns are of little or no further use. For spring flowering the crowns or clumps may be firmly potted now in a mixture of loam, leaf mould, and sand, the former preponderating, and buried in fibre or ashes in a frame like Hyacinths. The requisite number of pots can then be withdrawn at intervals and placed in a warm house so as to maintain a prolonged supply of flowers. If the pots can be plunged in a warm bed growth will be accelerated, and it is well to cover the crowns an inch or two deep with fibre or leaves. They will grow very well in a temperature ranging between 55° and 70°, or even less, but the lower the temperature the slower is the growth, and usually the sturdier the plants. If good foliage is developed, and this is well supported and matured under the full influence of light and air, late-forced plants will flower again another year.

Vines Failing (A. S.).—We are very sorry that after such an earnest attempt has been made to grow good Vines the result is so unsatisfactory. The roots are in a very peculiar state and suggestive of the presence of phylloxera, but we failed after a most careful examination to find any of the insects or eggs. We know the soil is not suitable, but we are scarcely satisfied that it alone is the cause of the failure. The compost is far too unctuous and rich—too full of nitrogeous matter, and too destitute of mineral, also too retentive of moisture. When pressed it is like putty, and the reverse of tempting to the roots of Vines. It is only by an effort that they have penetrated it, and it is evident they could not remain healthy in it. We do not quite comprehend the condition of the Vines when they were planted in May. They may have been raised from eyes early in the same year and planted in a growing state, and thus received a check at the outset; or they may have been last year's canes, which would then have grown freely, and in this case, if the canes were of considerable length and the roots disentangled to any material extent, a check would inevitably follow, and a vigorous summer's growth could not be expected even if the soil were more favourable for early and free root action than is the mixture before us. When planting canes are left too long the root power is apt to be frittered away over a number of shoots which push from the cane, whereas were it concentrated in one or two as low down as convenient, that is where they can receive full light, strong summer growth follows, and without this there cannot be strong healthy roots. In your case, though a good foundation was made with concrete and adequate drainage, the border was made very much too large, and the soil far too rich. It would have been better without any manure, except on the surface. Then a check may have been received as suggested, even if the roots were free from parasitical insects, and we cannot say they were. The action that has been taken now of narrowing the borders to 4½ feet, and cutting down the Vines, also all the decayed roots, we consider right, but instead of adding more manure a large addition of lime rubbish, wood ashes, and coarse sand would have been much more beneficial. We doubt if fresh roots would start freely in such a wet rich medium. If the Vines were ours we should take them up, pot or place them in a free gritty compost, and keep them cool until spring, then plant them when growth commences. In the meantime we should spread lime rubbish 4 inches thick on the surface, or failing this chalk, which we think is plentiful in your district; also some newly slacked lime, say nearly half an inch thick, as well as all the wood ashes you can obtain, and some coarse sand, well incorporating these additions with the soil. The sooner this is done the better, and a month before planting we should have the border turned over again. At present some of the loam is nearly saturated, and as the border is inside the twice turning would sweeten the mass and render it infinitely more suitable for Vines than the border is now. All requisite manurial ingredients can be given on the surface, and we should mulch over the roots after planting, but not with a rich close manure, like a plaster. But we have another suggestion to make that may or may not be acceptable, and indeed may or may not be necessary, for we do not know the actual condition of the present Vines; therefore our suggestion shall be made for consideration only—namely, the advisability of procuring fresh and good planting canes. These well managed would make strong growth, and those now in possession may do. That is for you to consider and

determine. If fresh Vines are decided on they should be ordered at once, cut back on arrival to good eyes as low down as possible, so that when planted growth can start under the full influence of light. It would be advisable to dress the ends with styptic or knotting, to make sure against bleeding, and the Vines should be kept quite cool through the winter, and planted when they make an inch or two of growth in the spring. We regret the misfortune, which, however, is not the first by many of the same kind, nor will it be the last. It is the result of overzeal, an evident desire and earnest effort to win success, and we trust the gardener who has made this endeavour will still be rewarded with a fine house of Grapes.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved.—(A. G.).—1, Doyenné Boussoch; 2, Dunmore.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (F. P.).—1, Colletia horrida; 2, Colletia cruciata. The others were not in suitable condition for determination. (S. T.).—1, Adiantum farleyense; 2, Adiantum macrophyllum; 3, Asplenium bulbiferum. (W. W.).—1, Selaginella Kraussiana; 2, Selaginella Martensi.

TRADE CATALOGUE RECEIVED.

Dicksons & Co., 1, Waterloo Place, Edinburgh.—*List of Select Roses, 1890-91.*

COVENT GARDEN MARKET.—DECEMBER 3RD.

TRADE quiet. No alteration.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, ½ sieve	1	6	to	6	0	Lemons, case	20	0	to 28 0
" Nova Scotia and						Melons, each	1	0	2 0
Canada, per barrel	15	0				Oranges, per 100 ..	4	0	9 0
Grapes, per lb.	0	9				St. Michael Pines, each..	2	0	8 0
Kentish Cobs	65	0				Strawberries, per lb. ..	0	0	0 0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes, dozen	0	0	to	0	0	Mushrooms, punnet ..	1	6	to 2 0
Beans, Kidney, per lb. ..	0	6				Mustard & Cress, punnet	0	2	0 0
Beet, Red, dozen	1	0				Onions, bushel	3	0	4 0
Brussels Sprouts, ½ sieve	1	9				Parsley, dozen bunches	2	0	3 0
Cabbage, dozen	1	6				Parsnips, dozen	1	0	0 0
Carrots, bunch	0	4				Potatoes, per cwt. ..	3	0	4 0
Cauliflowers, dozen	2	0				Rhubarb, bundle	0	2	0 0
Celery, bundle	1	0				Salsafy, bundle	1	0	1 6
Coleworts, doz. bunches	2	0				Scorzonera, bundle ..	1	6	0 0
Cucumbers, doz.	2	0				Seakale, per bkt. ..	0	3	0 0
Endive, dozen	1	0				Shallots, per lb. ..	0	3	0 0
Herbs, bunch	0	2				Spinach, bushel	1	0	2 0
Leeks, bunch	0	2				Tomatoes, per lb. ..	0	4	0 8
Lettuce, dozen	0	9				Turnips, bunch	0	0	0 4

CUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	4	0	to	8	0	Narciss (Paper-white),			
Bouvardias, bunch	0	6				French, doz. bunches ..	4	0	to 10 0
Carnations, 12 blooms ..	1	0				Do. Do. English,			
Chrysanthemum, 12 blms.	1	0				per bunch	1	0	1 6
" 12 bunches	3	0				Pelargoniums, 12 trusses	0	9	1 0
Epiphyllum, doz. blooms	0	4				" scarlet, 12 bunches	4	0	6 0
Eucharis, dozen	3	0				Poinsettia, dozen blooms	4	0	9 0
Gardenias, 12 blooms ..	4	0				Primula (double) 12 sprays	0	6	1 0
Lapageria, 12 blooms ..	2	0				Roses (indoor), dozen ..	0	6	1 6
Lavender, dozen bunches	0	0				" Red, 12 blooms ..	1	0	2 0
Lilac (French) per bunch	5	0				" Tea, white, dozen ..	0	6	2 0
" longiflorum, 12 blms.	4	0				" Yellow	3	0	5 0
Maidenhair Fern, dozen						Tuberose, 12 blooms ..	0	4	0 0
bunches	4	0				Violets (Panne)	2	6	3 6
Marguerites, 12 bunches	2	0				" (dark)	1	0	2 0
Mignonette, 12 bunches ..	3	0				" (English), doz. bunch	1	0	2 0
Mimosa (Ench.), per bunch	0	9				Wallflower, doz. bunches	3	0	6 0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Aralia Sieboldi, dozen ..	6	0	to	12	0	Geraniums Scarlet, p. doz.	2	0	to 6 0
Arbor Vitæ (golden) doz.	6	0				Hydrangea, doz. pots ..	9	0	18 0
Asters, dozen pots	0	0				Lilium lancifolium, doz.	0	0	0 0
Calceolaria, per doz. ..	0	0				" longiflorum, doz.	0	0	0 0
Chrysanthemum, per doz.	6	0				Lily of the Valley, 12 pots	0	0	0 0
Climbing Plants, various,						Lobelia, per doz.	0	0	0 0
dozen pots	4	0				Marguerite Daisy, dozen	6	0	12 0
Dracæna terminalis, doz.	24	0				Mignonette, per dozen ..	4	0	6 0
" viridis, dozen	12	0				Musk, per dozen	0	0	0 0
Epiphyllum, per dozen ..	12	0				Myrtles, dozen	6	0	12 0
Erica, Cavendishi, per pt.	0	0				Nasturtiums, dozen pots	0	0	0 0
" various, dozen	12	0				Palms, in var., each ..	2	6	21 0
Euonymus, var., dozen ..	6	0				Pelargoniums, per doz. ..	0	0	0 0
Evergreens, in var., dozen	6	0				Poinsettia, per doz. ..	9	0	15 0
Ferns, in variety, dozen ..	4	0				Rhodanthe, per dozen ..	0	0	0 0
Ficus elastica, each. ..	1	6				Stocks, per doz.	0	0	0 0
Foliage plants, var., each	2	0				Tropæolums, various, per			
Fuchsia, per doz.	0	0				dozen	0	0	0 0



SWINE.

THE first farrow of pigs of a young sow is not usually so numerous as those which follow it, yet many closely approach the average of ten pigs. Three well-bred Suffolk sows have had their first farrows during the last four or five weeks, and they amount to a total of twenty-six pigs, two sows having each had eight, and the other ten pigs. The first farrow will soon be weaned, and though the sow is somewhat low in flesh she is by no means down to the bag of bones level, or anything like it. Judicious breeding and feeding both tell in her. She has suckled her pigs thoroughly well, and now takes rank among our most valuable sows. The pigs are sturdy, thriving, and healthy. They have had a low shallow trough outside the sows' sty, in which they have had milk thickened with meal regularly, milk alone being given at first for a few days, the meal being added gradually.

Each of these sows has its own sty, of a uniform size of 8 feet square, with front courts a little larger. Stys and courts are made quite clean every morning, while the first meal is being consumed, clean dry litter tending wonderfully to render the sows quiet and contented. At this season of the year all pigs revel in abundance of dry litter into which they can burrow for warmth, and all should have plenty except farrowing sows, for whom only a moderate quantity of short litter is best, just enough for a bed and no more. The sows should not be disturbed at the farrowing, but it is always desirable that the stockman should be near in case of any emergency, as, for instance, in a case where pigs only a few hours old were attacked by rats, and one of them killed, or where the sow is very restless, and it may become necessary to remove the pigs for a short time. This can easily be managed by giving the sow a warm mash, and while she is eating it everything possible should be done to make her comfortable, and she will soon settle down quietly with her pigs. Care and attention tell in this as in most things, and while in the majority of cases the sows are best left to themselves, yet occasions are certain to arise when help may usefully be given.

After the pigs are withdrawn from the sow she ought by no means to be turned out in a yard to subsist upon a daily Mangold or two, and what water she requires. By all means let her have some Mangolds and Turnips, but she ought also to have a little corn or buttermilk slightly thickened with coarse middlings for the due promotion of health and strength, and the recovery of condition lost in suckling her pigs. In a breeding sow we require neither fatness nor leanness, but a mean between the two extremes if we would have a healthy and abundant progeny.

Young pigs require no costly buildings or separate piggeries. A well littered open hovel or lodge, with a yard in front of it, and perhaps a division or two to separate bacon hogs from porkers, is all that is really requisite, but they must be kept clean and well fed, and then there need be no fear of infectious disease among them. Never let it be forgotten that in nine cases out of ten swine fever comes to a farm in newly purchased animals or strange sows. Let it be an inflexible rule to keep all strange pigs or new purchases apart from the home stock till it is seen that they are quite sound and free from disease of any kind. Such precaution is a very simple matter, but it is often neglected; disease makes its appearance, losses follow, another case of swine fever is reported, and, strange to say, its origin is generally regarded as a mystery. If a little common sense were brought to bear upon this matter, and due precaution taken, there would soon be an end of contagious disease among pigs. Why should they be kept in a filthy state more than any other animal? From mere custom the surround-

ings of pigs are suffered to become repulsive, yet a well kept piggery is really an attractive sight to all who care to see good practice in farming.

The question is sometimes raised whether it is best for farmers in a small way to keep breeding sows or purchase young pigs at about two months old. There is so much in favour of breeding one's own pigs that we do not hesitate to vote for the sows, provided they are well bred, and are not kept on when they become so big as to be unwieldly. Then they should always be fattened and sold, not killed for home consumption, as the pork is coarse and somewhat hard. There is always a market for fat sows, and we have sold them at all prices, from £4 up to £10 apiece, precisely according to size and quality.

WORK ON THE HOME FARM.

A fine and exceptionally mild period in November proved most favourable to all crops. With us sowing began early, seed germination followed quickly, and the plant came full and vigorous. Whether taken collectively or separately the crops are alike good. Wheat and Winter Beans are both very good. The Wheat passed through the first of its five stages—that of germination—so well that the second stage of rooting is sufficiently advanced to give the plant a wonderfully vigorous appearance. The importance of free root action in the Wheat crop cannot be over-estimated, for it continues slowly throughout winter steadily taking up nutriment from the soil, which contributes so much to the third stage of straw and ear development, and tends as much as anything, perhaps more than anything, to a final result far above the average. There can be no doubt, too, that early sowing and vigorous root action both tell favourably upon the fourth stage of flowering and full corn in the ear, as well as upon the final stage of maturity which is much accelerated. Of course nothing we can say now can affect the Wheat sowing for good or evil this season, but a useful lesson for future guidance may best be enforced while special attention is being given to the condition of winter crops.

Rye is wonderfully vigorous, so are Winter Oats and Barley. Tares and Trifolium are equally good, and layers both of Clover and mixed seeds are remarkably luxuriant. Cattle Cabbage, even when planted late, are a full and heavy crop, roots are abundant and the silage stacks are much more bulky than the hay stacks. On the whole the outlook is satisfactory, there is an ample store of winter food and fair promise already for another season.

More work than usual has been done on the land this autumn, and now that is at an end we are turning to corn threshing in real earnest. The best malting Barleys are being threshed and brought on the market as fast as possible, the price for really bright samples being so much above market quotations as to render it quite worth while running them through the corn screen a second time. Prices range from 29s. 5d. up to 46s. per quarter, the higher sum being sufficiently remarkable to have special mention. It points to a profit so good as to enforce the importance of good culture and pure samples better than anything we can say, and shows that Barley growing is not only still profitable but is likely to continue so.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

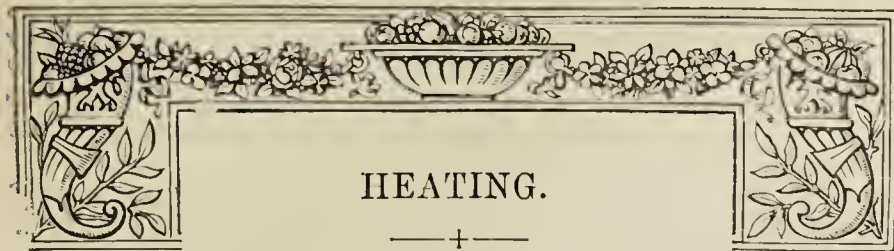
Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain
1890. November.		Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min.	In sun.	On grass		
Inches.	deg.	deg.	W.S.W.	deg.	deg.	deg.	In.					
Sunday 23	29.504	53.7	51.1	W.S.W.	47.9	58.1	45.6	60.8	41.9	0.222		
Monday 24	29.232	45.0	42.0	N.W.	48.9	47.3	43.2	69.4	38.2	0.010		
Tuesday 25	29.703	34.2	33.2	N.W.	46.2	42.3	29.8	62.7	23.1	—		
Wednesday .. 26	30.133	50.0	29.2	N.E.	43.9	33.7	28.2	53.8	22.2	—		
Thursday 27	29.994	27.4	27.0	N.E.	41.4	30.9	23.5	37.4	18.7	0.053		
Friday 28	29.995	24.8	24.6	N.E.	39.9	28.6	21.8	36.2	18.1	0.033		
Saturday 29	30.141	28.2	27.6	N.E.	38.9	33.2	20.8	34.2	20.1	—		
	29.822	35.2	34.0		43.9	39.2	30.4	50.6	27.3	0.321		

* Thermometer covered by a fresh fall of snow.

REMARKS.

- 23rd.—Rain in small hours; windy and overcast day, with occasional spots of rain.
 24th.—Wet in small hours, and heavy rain at 3 A.M.; almost cloudless from sunrise to 9.30 A.M.; wet from 10 to 11 A.M.; then fine again, and clear cold night.
 25th.—Generally bright in morning; overcast, with spots of rain, in afternoon; bright night.
 26th.—A sprinkling of snow on ground; alternate spells of bright sunshine and slight sprinkles of snow; clear cold night.
 27th.—Bright early; frequent slight sprinkles of snow in morning; bright afternoon and evening.
 28th.—Snow believed to have commenced between 2 and 3 A.M.; fell incessantly till 3.30 P.M., and just a sprinkle at night, covering the ground to a depth of nearly 2 inches.
 29th.—Overcast, with occasional flakes of snow in morning; fair afternoon; bright night.
 Very sharp frost in the latter part of the week, which has brought the mean much below the average. The minimum on the 29th, 20.8°, is the lowest recorded in November since 1858.—G. J. SYMONS.



MAINTEINING the requisite amount of heat for the well-being of plants, also of such fruits and vegetables that need it, is one of the most important duties of gardeners, as well as of amateurs who derive pleasure from indulging in gardening under glass. These are increasing every year, and scarcely any villa is now regarded as complete without a conservatory. The public appreciation of glazed structures is so decided that speculative builders find it advantageous to invest in these adjuncts to homes for rendering them more tempting to tenants and purchasers, and it is well known that the trade in portable greenhouses for amateurs has increased enormously during recent years. It is gratifying to know that this is so, because homes are made pleasanter and families happier through a real interest being taken in the cultivation of plants and flowers under glass in winter, and Grapes, Tomatoes, or Cucumbers in summer. No doubt, difficulties are encountered in the pursuit in question; but these more often than not have given zest to endeavour, and first failures have not infrequently pointed the way to future success.

A chief difficulty that many have to contend with is that of heating; and these are not amateurs alone, but several gardeners. Much more is often expected from the provision afforded than can possibly be accomplished. The heating arrangements in many gardens are seriously defective. Perhaps the most apparent faults are those arising from motives of economy in unduly limiting, not so much the power of boilers, as the piping by and from which the heat is to be diffused. It is not in the least uncommon to find boilers capable of heating twice the extent of piping provided, and which is necessary for heating the structures satisfactorily and economically. When the requisite heat cannot be afforded without "keeping the water boiling," the piping is inadequate. Not only are very highly heated surfaces inimical to plants, but involve a much greater expenditure in fuel than suffices to heat a greater length of pipes moderately; or, in other words, a small outlay in providing additional piping where it is needed would reduce the consumption of fuel to a material extent, and thus in the end a distinct saving would be effected. For maintaining the requisite temperatures in glass structures in a manner the most beneficial to vegetation the pipes ought not to be hotter than can be borne by the hand for a few minutes, as a rule. Occasions may arise when it may be necessary to have them hotter for a short time, but undoubtedly the greater the overheating as a system the less healthy will be the plants, and the greater their liability to be attacked by insects. It is, therefore, decidedly false economy to unduly limit the extent of pipes for the purpose for which they are provided.

The most effectively heated houses are those in which the required temperature is maintained the most easily, or by an apparatus that is well master of its work when properly attended to. A gentle fire that can do what is wanted without being disturbed for ten or twelve hours will not consume half so much fuel as will a "roaring" fire in half the time, and which cannot be safely left for more than two or three hours in severe weather without the temperature falling below the safe minimum. There cannot be two opinions as to the former method being the easier, while it is decidedly the cheaper, as well as indisputably the more reliable. In the one case the owner or manager can rest comfortably after he

has done his duty, and in the assurance that all will be right; but in the other he cannot divest himself of anxiety, for he is conscious that, with practically no margin for contingencies, something may happen when he is helpless to prevent, and which may have serious results.

Some heating arrangements are faulty through the ill-setting of boilers and arrangement of pipes. The fire cannot act too directly for heating the water, nor can this flow out of the boiler too freely and along the pipes too smoothly. In not a few instances the water is obstructed in its very first movement by the infinitely too small connecting pipe from the boiler and through masonry to the larger pipes in the house. Even if those connections are clear they are insufficient, but in scores of cases they are half choked with fur. What is referred to as the "sluggish action of boilers" has been traced over and over again to the defect in question, and there are no doubt numbers of boilers at this moment "throttled" in the manner indicated, while the cause of the difficulty in heating is not suspected.

Not a few boilers that are good in themselves, and with little or nothing the matter with the connections or arrangements, do not perform their work as they ought, because the parts exposed to the fire, also the bars and flues thereto pertaining, are not kept clean. This work is usually entrusted to young men, and these vary in the management of fires and stokeholes. Some are careless and slovenly in their work, others the reverse; and further, it may be said that some men who have been long out of their teens do not appear to fully comprehend the importance of removing every obstruction of the nature suggested, and neither do the requisite work themselves nor see that others do it. Discoveries of delinquencies in these matters have often been made which have led to sayings and doings not of a pleasant nature. The truth of this is known to dozens of gardeners, old and young, who will read these lines, and if their publication will induce all who are responsible for heating to look closely into the conditions of stokeholes and boiler surroundings it is almost certain that something will be found open to improvement, unless (which is better) the stokers are on the alert, have the first inspection, and promptly make good any defects in past management. A disorderly stokehole is generally the index to something worse—namely, the general careless habits of the man in charge. A person who conscientiously does work well that is out of sight soon gains, as he deserves, a character for trustworthiness that is bound to stand him in good stead in after life.

A great deal depends in the management of fires on maintaining a suitable temperature in garden structures. A thoughtful man, who looks ahead and forms a reasonably good forecast of the weather a few hours in advance, and who commences action in good time, will accomplish the object in view far more easily, and with less fuel, than will another who allows himself to be taken by surprise by a (to him) unexpected fall in temperature, and then makes violent attempts to "raise the glass," that ought not to have fallen so low. Amateurs, especially the comparatively inexperienced, are prone to err in not starting the fires soon enough in the afternoons of bright days. The temperature in the house may register 50° or more, therefore all is thought to be right though the pipes are cold and the sky cloudless. They, therefore, wait for a little while, and perhaps in half an hour the cold has increased by from 5° to 10°. They then rush to wood, coals, and petroleum, but do all they will they cannot arrest the downward movement as indicated by the thermometer, and the danger point is reached in spite of all their efforts. They simply allow the cold to steal a march on them and prove the master, whereas by earlier action they might easily have kept it in subjection, and without difficulty prevented the temperature falling below the prescribed minimum, always provided the heating medium was equal to its work. And not only is early action in the daytime, in anticipation of a cold night, necessary to be master of the position, but early attention

in the morning is equally important. Great has been the injury done to plants, and during forcing operations, by a chill more or less severe a little before daybreak, when the cold is often the greatest, and fires have burnt down or become clogged, and the pipes have lost heat accordingly. However carefully the fires may be attended to at night, and they cannot be attended to too carefully, the work is only half done, and can only be complete and satisfactory when resumed before the dawn of day during the winter and spring months.—EXPERIENTIA DOCET.

RENOVATING ORCHARDS.

[A Paper by Mr. JOHN WRIGHT, read on behalf of the British Fruit Growers' Association, at a meeting of the Falmouth Horticultural Society, November 12th, 1890.]

(Concluded from page 486.)

ONE of the most remarkable instances of improving fruit trees not on grass that has come under my notice was in the garden of Mr. Edmund Tonks, a gentleman of great scientific attainments and practical skill in Warwickshire. He planted an extensive collection some years ago, but the trees appeared to become old prematurely, growth practically ceased, the stems were as if devoured by canker, and the fruit was worthless. The soil was heavy, and, as was subsequently found out, poor, or in other words, contained little of the manurial essentials for maintaining healthy growth. Having ascertained what the soil lacked, and what Apples needed, the necessary ingredients were obtained and applied. These were superphosphate of lime twelve parts (or lbs.), nitrate of potash (saltpetre), ten; chloride of sodium (common salt), four; sulphate of magnesia, two; sulphate of iron, one; and sulphate of lime (gypsum), eight. These were well mixed in the proportions named, and applied to the soil yearly at the rate of quarter of a pound to the square yard. Improvement was soon manifest, and when I saw the trees at least 10,000 canker wounds were healed, and not one could be found in which the disease was active, yet nothing had been applied to the branches. In that case canker was the result of starvation, and with proper food the trees were restored to health and usefulness. The above may be said to be a complete manure for Apples, but as the majority of soils are not lacking in all the essentials, what may be called simpler applications usually do great good. The liquid manures above alluded to contain most of what is required, and in their absence a mixture of six parts (or pounds) of superphosphate of lime, three of muriate of potash, and two of sulphate of ammonia, applied at the above rate will generally improve enfeebled trees, as also will guano guaranteed to contain not less than 8 per cent. of ammonia, and 20 per cent. of phosphates. All chemical manures used as top-dressings should be applied not later than February; sprinkled on the land in late spring or summer they do little good, as they are apt to remain undissolved for a very long time, and therefore cannot be taken up by the roots. If used in solution they act quickly. For enfeebled fruit trees a pound of guano may be dissolved in 10 gallons of water, or the same quantity of the "simple mixture" above mentioned, either of which, applied in winter, will be bound to do good if it reach the roots. It may be mentioned that the strength named is twice what suffices for general garden crops other than trees. A peck of poultry or pigeon manure dissolved in 20 gallons of water is also excellent for debilitated trees. A farmer of my acquaintance gives a water-cartful of stable drainage to a favourite Apple tree every year when it is swelling its blossom buds, and it seldom fails to reward him with £5 or £6 worth of fruit, "leaving a profit," he said, "greater than he could obtain from an acre of Wheat." If he applied the liquid earlier it would do just as much good, possibly more, but given much later would be much less effectual. The tree is on grass, and the variety Gascoigne's Scarlet Seedling.

Something must be said on pruning in the renovation of enfeebled orchard trees. The interior of many trees is just a thicket of useless growths, fruit being produced on what is termed the "outside" of the trees only, where the leaves are exposed to the light and air; indeed, it cannot be produced under any other conditions. The aim, then, of the improver should be to invigorate those outside growths, which, perhaps, do not extend more than an inch or two a year. They must not be shortened nor materially thinned out, but the pruning must be confined to the removal of the useless shoots and small branches that start from the larger or "arms" of the tree, and push upwards in their endeavour to reach the light. They bear nothing but leaves, and it is not in the power of man to make them do anything else; but what they do is this: they divert the sap from the fruit-bearing parts, and to that extent deprive them of the support they need for making them stronger and more productive. The crowd of growths in the centres of old

trees where no sun and little light can reach may be likened to robbers, and should be cleared out. Shortening them will not suffice, but may make matters worse; they should be cut or sawn off close to the large branches from which they spring, and the wounds pared smooth with a sharp instrument. The sap will then flow direct to the fruitful parts, and these will be strengthened accordingly. If the soil is enriched the growths will be still further strengthened, and may be trusted to find themselves room on the outsides of trees; at least when these stand, as they should, distinctly apart from each other.

It will be seen that the method of renovation advocated resolves itself into this—giving the famine-stricken trees the food they so urgently need, and clearing the way for its distribution through the stems to the spur and fruit-bearing parts that are exposed to the direct action of light and air; but in removing the obstructive growths from the interior of trees, what may be termed a small matter of very great importance, must not be overlooked, or the trees will soon be choked worse than ever. In the spring following the pruning, which cannot be done too soon, clusters of young shoots may push from the main stems from which the useless parts have been cut. Obviously if these are allowed to extend they first divert the sap from where it is required for fruit production, and subsequently and soon fill up the trees with another horde of robbers. Nothing is more easy than to prevent this, and nothing more certain than that it has not been prevented in the case of thousands of trees, and the pruning has consequently been proclaimed as having done no good. Of course it has not under the circumstances, but that is the direct result of either thoughtlessness or negligence. What ought to be done is this—when the young spring growths referred to are an inch or two long an active man should rub every one of them out by the socket, going over the tree two or three times if needed. Cutting them off is of no use. The work is quickly done, and is absolutely necessary if the pruning is to be effectual.

Cleansing old and neglected fruit trees is a necessary operation in their regeneration. Not the stems alone, but the branchlets and fruiting spurs may be thickly covered with moss and lichens. The incrustations should be scraped from accessible parts, and then lime-washed, and where the scraping cannot be done, as in the most important parts—among and around the fruiting spurs, these should be thickly dusted with freshly slaked lime on a still day when every tree is dripping with wet, such as after a mist or fog. It is easily and quickly done. Send a man with a scuttle of lime on his arm up a ladder that reaches well above the tree. Let him dash the lime about in all directions, under and over the branches, sparing it not, yet letting every handful "tell," and if he does his work well the trees when dry will be as white as if covered with hoar frost, and the moss will vanish, leaving the wood perfectly clean. Nor should the lime that falls on the ground be considered as wasted. It will do great good. There can be no really healthy trees without lime in the soil, and there is seldom any in that of old orchards, except on the limestone formation, and often not enough there in the upper layer of soil, for it has either been washed down by the rains or extracted by the trees during their long occupation of the ground. The application of lime in the manner advised is unquestionably highly beneficial to moss-laden fruit trees.

Insects when present must be extirpated. One of the worst of these is the woolly aphis or American blight, which often crowds into every crevice, punctures the bark, and does incalculable injury. It may be destroyed with a solution made by dissolving two or three ounces of soft soap and a walnut-sized lump of soda in a gallon of boiling water, and while hot stirring in violently half a gill of petroleum, such as is burned in lamps. It should be brushed well into insect-filled crevices, stirring the mixture as the work proceeds, and some may be syringed with advantage all over the trees. Fruit trees syringed every winter with this mixture are usually kept free from moss and insects on the stems, though some may attack the leaves in summer. Pure petroleum has been advised for fruit trees, and though in some cases it may not have done harm, in others it has proved fatal to the trees. It is wasteful and foolish to resort to dangerously strong remedies when weaker and quite safe applications are effectual.

The subject of renovating fruit trees is a great one, and unquestionably important. It cannot be usefully treated in a few words; therefore, at the risk of being tedious, I have felt it undesirable to skim over the surface, and have endeavoured to describe in plain language methods which have proved successful in accomplishing the object in view. But while many old orchards may be, and should be, greatly improved, I am convinced that the fruit of the future that will command attention in our markets will be the produce of vigorous young trees not planted in or on the sites of old plantations either of fruit or of forest trees, but in fertile soil (not in damp valleys), such as is capable of growing first-class crops

of Wheat, Clover, and Potatoes. Let all who have old orchards make the best of them by all means, but also let all who can do so plant young trees.

THE GLADIOLUS—HYBRIDS OF GANDAVENSIS.

THOSE who grow this most beautiful autumnal flower have carefully harvested the corms, and are eagerly scanning the catalogues of the raisers as to what new varieties may be added to their list; those who have not grown them have taken notes of some that they have seen on the exhibition table in order that they may commence their cultivation. It may therefore be an appropriate time to say something about them, and the more especially because some statements have been made which I think are not borne out by facts. It is sometimes said that when persons grow large quantities of any flower they must know more about them than those who grow only a few. I do not believe this to be the case. I am quite sure that many amateurs know more about the peculiarities of the different varieties than those who grow ten times the number, because amateurs watch each plant, and thus it may be that the grower of a few hundred Gladioli may know more about them than does the grower of thousands.

Gladiolus gandavensis is itself a hybrid supposed by some to be a cross between *G. psittacinus* and *cardinalis*, and by Dean Herbert to be a cross between *psittacinus* and *oppositiflorus*. I think the latter to be more correct, as it would account for the white flowers we get; but this is not conclusive, as we know what strange vagaries in colour we witness in many flowers. We have, for instance, in the Shirley Poppies colours of which we can find no trace in the wild Poppy from whence they originated. Whatever the parentage of this variety may be it has, under the hands of one or two cultivators, attained to great beauty, and no one can see a good stand of these set up but must be struck with their great beauty and variety of colour. Mr. Baker, who is a most accurate observer and writer, says that *G. gandavensis* was raised by Dean Herbert and sent to Van Houtte, who could not flower it; that it was sent by him to the Cape, where it flowered; and thence was sent home to Ghent and sent out by Van Houtte as *gandavensis*; but surely in this case Dean Herbert would hardly have written hesitatingly of its parentage, nor do I see why there should have been any difficulty in flowering so hardy and free-flowering a bulb. The cultivation and improvement of the plant was taken up very energetically about forty-five years ago by M. Souchet, who was *jardinier en chef* at the Palace of Fontainebleau. He retired from his office, and then, notwithstanding his miserable health, devoted himself entirely to their culture. I can look back with remembrances of special pleasure to my intercourse with the dear old man. At his death the culture was carried on by his nephew and successor, M. Souillard, associated with M. Brunelet. A few years later the late Mr. John Standish of Bagshot entered very enthusiastically, as he always did into everything he undertook, into their hybridisation; and long before Mr. Kelway came to the front his flowers obtained a certain reputation. Of course Mrs. Standish, Samuel Weymouth, and other flowers which at that time were thought most of would now, like the French ones of the same date, be considered utterly useless. The strides which have been made in this flower are very wonderful. In such varieties as Mont Blanc and Enchanteresse we have flowers three times the size of some of the older varieties, while in form, length of spike, and closeness of flowers there is nothing much to be desired that we have not obtained. It has been stated lately that the French do not admire such close spikes as we do, and that consequently the French spikes are less compact than the English. This is an utter mistake. Of course all are not equally well set; but take such flowers as Grande Rouge, Caméleon, Cervantes, Ovide, and indeed most of those which we exhibit are set so perfectly close as to overlap one another, while in length of spike they even exceed any English raised seedlings I have seen (except Mr. Burrell's), eighteen expanded blooms having been exhibited of some varieties. Mr. Burrell showed a spike of his seedling Snowdon, a grand white flower, at Sandy with twenty expanded blooms on it.

Coincident with this improvement in the flower itself has been that in its cultivation. Mr. Standish used to argue that it was best to make the soil as poor as possible, and when too rich even to burn it; but this is now an exploded notion, and the experience of most growers is that a good strong loamy soil is that which suits them best. This is the soil which Mr. Lindsell has, and which made me say to him when I urged him to grow them, "I know if you do you must beat me; your soil is so good." I believe the same of my friend Mr. Fowler of Claremont, near Taunton, and the sample I saw of his flowers the first year of cultivation at Taunton makes me think I, at any rate, shall have to take a back seat; in fact, a soil which will grow Strawberries and Roses well will grow the Gladiolus.

The time for planting them is about the beginning of March, but at any time during that month or April when the weather is favourable will do. I do not think that it makes much difference as to the time of flowering, whether it is a month earlier or later. There are some early forms, such as Shakespeare, which will bloom at the end of July, no matter whether you plant in March or April: while there are others, such as Matador, which will not bloom till the end of September, no matter how early they may be planted. The best plan is to trench the ground in the autumn where they are to be planted, leaving it up in lumps to let the frost penetrate it and sweeten it, all manure being dug in at this time. When the ground is ready for planting beds should be made 4 feet wide, to contain four rows of corms, which should be planted in rows 12 inches apart, and about half that distance apart in the rows. About 4 inches is a good depth for them, and here let me allude to a practice which is now generally practised, but which I heard condemned by an eminent authority—viz., that of cutting the corms in two before planting. If the outer skin be taken off when the corm is dug up there will be seen two if not more eyes, two at any rate. Now if the corm be divided so that each part has one of these eyes in it, you will have two plants instead of one. If the corm is left entire it is possible there may be two spikes, but very often if one is a little in advance of the other it will absorb the entire strength of the corm, so that the second shoot does not push at all. It was stated lately that this was wrong, and that it was not possible to obtain good blooms on corms if so treated. With regard to the former I can only say that all the spikes exhibited by Mr. Lindsell and myself were from cut corms. Nay, more than that, I am prepared to say that I and my friend are prepared to challenge any one amateur or professional to show eighteen blooms from cut corms against those from uncut ones, and that as to the corms produced I showed one at the meeting of the Horticultural Club, taken at random from some I had already lifted, which was between 9 and 10 inches in circumference, large enough for anything.

In planting I place some coarse road grit and charcoal about the corm. I do not like sand for pads, as it is called in East Kent, and I think it expresses very well the effect of sand—it gets close and soddened; and I do not believe, either for these or Lilies, that it is desirable to use it in this way. Of course, mixed with the soil it is useful, but not immediately about the corm. After they are planted very little care is necessary for some time, save keeping the beds clear of weeds. I believe that the Gladiolus likes a wet and moist summer better than a dry one, provided a dry autumn follows; the autumns at Fontainebleau are drier than ours, and the dryness of the autumns in Cambridgeshire gives Mr. Burrell a great advantage. When the plants are about a foot high and begin to show the spike each plant ought to be staked, and it is very necessary, as the spikes are apt to come crooked if it is not attended to in time. This is a troublesome affair where a large quantity is grown, and yet it cannot be dispensed with; it is possible, too, that the stake may have to be shifted afterwards, for it must be at the back of the flower, otherwise the blooms will be separated instead of being kept close together, and will also be rubbed: the stakes are to be about 5 feet in length, so as to let the whole spike be tied. When the spikes begin to develop is the time when artificial manure is to be applied if used at all. I have never done so, but others have used it with, they tell me, good results. My friend Mr. Lindsell employs muriate of potash. Mr. Kelway has a special preparation which he sells for the purpose. At this time, too, mulching must be done, if done at all; the action of fresh manure when it comes into contact with the corms is, we know, injurious, but I am not aware that when applied in mulching, allowing the fertilising salts to be washed down, it will do any harm. Its utility or otherwise would, I fancy, depend very much on the season. Should it be a wet season I very much question its utility, but if a dry one it will prevent evaporation, and secure a certain amount of moisture about the plants which I believe they like. On the whole, as far as my personal feeling and experience are concerned, I prefer to do without mulching.—D., Deal.

(To be continued.)

IRON.

ITS USE IN CONNECTION WITH FRUIT CULTURE AND DISEASES.

(Continued from page 493.)

SOIL fertility rests principally on admixtures. Sand to keep it warm, and open it to air and moisture; clay to keep it moist, holding, and conserving; lime doubly benefiting as a food directly, and a liberator of other food; humus, to afford aliment and maintain a supply of carbonic acid. Alluvial soils are generally fertile through an admixture of minerals derived from various rocks. All silts

contain iron, even pond and ditch scourings. They are sweetened by lime.

Trap rocks by decay produce clay soil, containing iron 6.84, fertile—in fact, decomposing trap is a mineral fertiliser. Old red sandstone soil in Herefordshire contains “cornstones” embedded in marl, decomposing into a soil of great fertility—reddish through a large percentage of oxide of iron. Apple and Pear trees have given Herefordshire cider and perry a world-wide fame.

New red sandstone seems to form a soil specially suited to Apples; they like red soil. Note the fact, the trias of Devonshire and Gloucestershire rival Herefordshire by its cider. Apple trees thrive on the middle lias of Somerset. Even a county (Rutland) takes its name from red land; that on the middle lias is very fertile. Stilton and double Gloucester cheese result from the rich pastures of the lias clays. Cheddar is produced by cows browsing on the pastures of the alluvium lias clay. Where fertility is there the soil is red—oxide of iron; but malm (firesione) is a calcareous sandstone of the upper greensand upholding the rich land of Farnham. Alluvial soils consist of well mixed detritus worn from various formations, and warping for the sake of the fertilising deposit is practised. Some rivers leave a deposit containing 15.65 peroxide of iron. In Lincolnshire and Yorkshire rich meadows and pastures are produced by warping. The Ouse, Derwent, Trent, Humber, Thames, and Severn have produced alluvial soils—all rich. Brick earths are “wash”—detritus worn from hills rolled down to produce rich soil in plains. Drifts are generally fertile; the boulder clay of Holderness, Yorkshire, is syenitic; Norfolk boulder clay is schist, iron borne on the bosom of ice-drifts from Sweden and higher latitudes.

There are a few facts about iron in soils not, perhaps, generally known. They are mainly gleaned from a very handy book of 176 pages, entitled “Soils and their Properties,” by Dr. W. Fream, and afford the best answer possible to the dictum, “iron is a source of injury in soils,” as is often asserted. In no case is it a cause of mischief where there is intelligent culture. It strikes Apple trees down with canker in light soils, and uproots them through canker in wet. If there is anything in facts they go to show that fruit trees are stricken in light soils through poverty—want of iron to grip ammonia; in wet soils through iron failing to get ammoniated for lack of air. In any case iron is not an enemy to, but a friend of the cultivator. Dr. Griffiths, in “Manures and their Uses,” page 99, states that on the German moorlands Thomas’ phosphate has proved equal to superphosphates. That is a clinching argument in favour of iron, but it is set down to economy—“a cheaper source of phosphoric acid.” Thomas’ phosphate contains ferrous oxide 14.66, and ferric oxide 8.64 = 23.30 iron. Peat soil contains when fertile 6.30 to 9.03, and 10.30 per cent.; sterile 0.46, 0.63, and 0.78. Moorland has all its iron washed out, hence the value of Thomas’ phosphate, but this phosphate contains lime. Fertile peat contains 1 to 5 per cent., unfertile 0.13, 0.32, 0.55, Thomas’ phosphate 41 to 47 per cent. Is the benefit, then, to be attributed to the iron? According to the German savants, the English agreeing, the phosphoric acid in Thomas’ phosphate is half as valuable as that contained in superphosphate of lime, yet it gave “equal, if not better results than superphosphate on the German moorlands.” Superphosphate ought not to contain iron oxide, but Dr. Voelcker found 4.64 in adulterated bonemeal. Clearly iron made Thomas’ phosphate equal to superphosphate on the German moorlands. On loam over clay I found no benefit from the iron in Thomas’ phosphate at 8 to 10 cwt. to the acre. A good handful, it may be stated in passing, per square yard improved the colour of Vine and Peach foliage; iron evidently is useful in forming chlorophyll, as will be shown presently.

All barren soils are deficient of iron. Sandy with a pan caused by shallow culture contain ferric oxide 2.00, humus being low 1.50, which makes just all the difference, for a black sandy mould had very little more iron, 2.13, but nearly 10 per cent. humus, and over 10 per cent. alumina, therefore it was fertile because alumina holds ammonia and iron, both ammoniating that substance. The barren had more sand, no more than a trace of potash, a half per cent. of alumina, nothing wherewith to grasp ammonia, the iron being in nodules, and wanting lime; indeed, there is no such thing as barrenness where iron exists along with lime, alumina each from 3 to 5 per cent., potash equal to 2 per cent., and phosphoric acid not under 0.25, and sulphuric acid not less than 0.10 to the extent of 4 to 6 per cent. It is injurious because it wants something to render it useful; in fact, it requires work. If none be granted it may act deleteriously. M. Ville declares that using nothing but farmyard manure exhausts the soil, but the Rothamsted investigators on this point state that where “there is a liberal use of animal manures, an accumulation of nitrogenous and mineral matter takes place in the soil.” This is conclusive, and light soils require animal manures more than heavy, for the simple reason that they lose more through

washing. Another reason is they last longer. M. Ville, however, states that only nitrogen, potash, lime, and phosphoric acid need be added to any soil in the form of manure. It seems that fertility of soils depends largely, if not entirely, on nitrification, and this on organic matter. Of course there is the organic remains of previous crops, and in the case of fruit trees their annual fibres to work on, else where does the organic matter originate where no manure is applied? Ammonia results from nitrification, is oxidised, becoming nitric acid, this unites with potash, soda, and lime, forming nitrates, and these are soluble, and become plant foods. There is something more, organic matter wherever it ferments is converted into carbonic and other organic acids, these are neutralised by lime, potash, &c., rendering some plant foods active and conserving others. Iron is a conservator of ammonia, it fixes ammonium carbonate. The stench from piggeries is notorious, and manure heaps are not always particularly sweet. Iron sulphate saves the waste of ammonia from manure by fixing it, the heap being watered with a solution of it, say 1 lb. to 20 gallons of water. Iron, therefore, is useful, a double sulphate of ammonium and iron is formed, the stench is taken away, the manure remains.

Road scrapings have virtue—iron, especially where whinstone is used or slag. All fruit trees like it along with lime; that, and silica, and iron help them to form stouter cell walls, to form flinty bark, to resist their fungoid enemies. English coprolites contain iron oxide and alumina 4.87 to 5.39 iron oxide, foreign 2.82 to 13.14 or more of iron oxide and alumina. They are best raw, especially for light soils.

Iron is present in all fertile soils, in all natural waters, and in all plants. Peroxide of iron and alumina, according to Liebig, form solid compounds with ammonia, and the precipitates obtained by the addition of ammonia to salts of alumina or iron are true salts, in which the ammonia is contained as a base. In fact, “all rust of iron contains a certain amount of ammonia” (Vauquelin), and Chevalier found ammonia a constituent of all minerals containing iron. “Soils, therefore, containing oxides of iron and burned clay must absorb ammonia” (Liebig). They further prevent, by their chemical properties, the escape of the ammonia once absorbed; but the ammonia absorbed by ferruginous oxides is separated by every shower of rain, and conveyed in solution to the soil. That gives iron some credit; but it is only half-hearted, for if iron forms compounds with ammonia it must liberate (render insoluble substances soluble) plant food. Ammoniated iron is as useful as ammoniated guanos, and better on soils derived from limestone and chalk rocks, for these set ammonia free, so that it volatilises into the air. Sulphate of iron, as before stated, prevents the escape of ammonia.

Soot contains oxides of iron and alumina 15.69 per cent. (Dr. Voelcker). How it beautifies sickly Wheat plants, puts green into Peas! Dr. Sachs says iron is indispensable to the green matter (chlorophyll) in leaves. “Iron sulphate,” Dr. Griffiths tells us, “destroys *Peronospora infestans* (the Potato fungus).” Prince Salm-Hortsmar tested the value of iron on Oats, “sickly and almost colourless” without it. “Knop, in 1859,” states Dr. Griffiths, “experimenting upon hybrids the most favourable to plant growth, recognised the necessity of adding phosphate of iron, or of sprinkling the roots of plants upon which he operated with this salt, and from his experiments drew the conclusion that these four bases—lime, potash, magnesia, and iron oxide—were indispensable to plants.”

Soils poor in iron oxide and lime appear most benefited by iron sulphate with an addition of lime, and on land on which, it is alleged, iron causes Apple trees to canker—viz., light, sandy loam, well drained—iron sulphate brought nearly 2 tons more of Potatoes per acre than land manured with farmyard manure and night soil mixed. The manure produced 5.02 tons, a dressing of three-quarters of a hundredweight iron sulphate per acre 6.76 tons, a gain in value of £3 2s. 3d. for an expenditure of less than £1.

Copperas or iron sulphate has long been known as an agent in the destruction of fungoid germs. Cereals are steeped in it before sowing to get rid of smut, ergot (*Claviceps purpurea*)—indeed, it is an antiseptic of the first order. It effectually destroys ergot in grass seeds, and there foster ergot through farmers allowing grass seeds to mature, for where grass is cut in flower there is no ergot, and a dressing of iron sulphate destroys fungoid germs in grass lands, and kills moss. Iron sulphate combats the Potato disease (*Peronospora infestans*), also the fungus on the tubercles of the Pea and Bean. Clover and Vetch roots—indeed, on all the pod bearers. Nodular outgrowths on Turnips are due to a fungus (*Plasmodiophora Brassicæ*), for which no remedies are so good as lime where the soil is not calcareous, and iron sulphate where it is, or both where there is a deficiency of soil constituents.

Now, I would ask space for a little inquiry into some disease I have occasionally of late years had to contend with in Cucumbers and Melons. The late Mr. R. Fish, in the *Journal of Horticulture*,

vol. xvi. new series, page 111, writes:—"Some fungi, if their mycelium occupy the soil, seem to do little injury to crops, but others seem to tolerate no rivals. We lately mentioned that some Cucumbers that bore heavily about Christmas seemed all at once to have lost their vigour, which they generally do when fruited hard before the turn of the day; but in taking them out we found another evil, half an inch or so beneath the surface of the soil and for a depth of 2 or 3 inches the bed was a mass of thready spawn, and this we have no doubt was the result of using leaf mould as a component part of a rich top dressing. As far as this spawn extended the roots were unhealthy. We believe that thousands of fruit trees, Vines, &c., have suffered by an excess of kindness through using half-decayed leaves in the compost of the borders. Mildew—mark the term—on the roots becomes then more dangerous than mildew on the twigs and leaves. Quicklime is a great enemy to all the fungus tribe that we have come in contact with, but a fiery heat seems to be the most successful opponent. A mild gentle heat, such as the heat of a Mushroom bed, seems most to promote their extension. Heaps collected from old shrubberies and woodlands are much more liable to fungus than the fresh-fallen leaves of the present season, though even they and their change in leaf mould are to be watched. A good heat in a hotbed will make them safe for the crops accelerated and safe afterwards." This is a very remarkable statement—a combination of practice with science, for there is not only a cause but a remedy suggested; but it was advanced before iron was broached in this country as a remedy for fungoid diseases. The Cucumbers failed because of the softness of their tissues—the lack of mineral matter to harden their epidermis, whereby they are able to withstand their fungoid enemies. There is the leaf mould, the manure, and the soil itself—turf. Now, turf usually contains little mineral matter of the order resisting fungoid germs; indeed, so poor is it in sand that a sixth is added for pot plants, and a goodly amount of grit, road scrapings, or old mortar rubbish for fruit trees, also for Cucumbers and Melons; and sometimes wood ashes, the mineral remains of plants. These admixtures are most salutary—indeed, they are essential. Practice has proved their value.

The disease in Melons and Cucumber stems and in their fruits is of a fungoid nature, partaking of the character of ferments, and comes in with organic matter, or a defect of inorganic, it may be phosphoric acid and sulphuric acid to energise the protoplasmic forces or of silica, lime and iron to strengthen their cell walls and epidermal tissues. But phosphorus, sulphur, iron, potash, lime, magnesia, soda, silica, chlorine are no use in those forms, and only as they are made available as food of plants. Even iron pyrites are of no good, they cannot, however, resist acids, and organic acids are Nature's mineral solvents. These cause the iron to give some of its store for the plant in a form it takes in by its root hairs. Dr. Griffiths states that iron sulphate acts on the "microparasitic cellulose" caused by the "fungus which produces nodular outgrowth upon the roots of the Cucumber, but not the cellulose of the plants," and goes on to say, "the spores of the fungus, which are extremely small, are found in the soils, where Cucumbers have grown, in the autumn and early winter, having been liberated by the rotting of the root nodules. These spores retain their vitality for months, and are capable of attacking the new seedlings planted in such soil. The spores are easily disseminated by such agencies as air, soils and streams. The Cucumber root fungus is completely destroyed by iron sulphate."—(Manures and their uses, pages 141 and 142).—G. ABBEY.

(To be continued.)

A GARDENING TOUR IN IRELAND.

DURING the past two months a rapid succession of fruit conferences and exhibitions, with the multitude of Chrysanthemum shows only just concluded, has kept me so closely occupied that the execution of a promise made some time ago to friends and readers of this Journal has been considerably delayed. When I returned from my journey in Ireland a brief résumé was given in these pages of general impressions, and this was followed later on at the Crystal Palace Conference by a condensed review of the aspects and prospects of fruit culture in the Sister Isle. Now, however, a little more leisure will permit a detailed reference to what I found a very enjoyable and interesting tour, and several reminders from correspondents both here and on the other side of the Irish Sea have prompted me to relate more fully the particulars of the journey, the routes taken, and the gardens visited. The fact is that much could be written concerning Irish gardens, for in the first place most of those of any note are very picturesquely situated, and the climate, as I have previously remarked, is admirably adapted to the growth of trees and shrubs, so that the most important features in parks or extensive gardens are nearly

always strongly marked there. Secondly, whatever may be said respecting farming or the general culture of the land, gardening is in the great majority of cases well carried out in private establishments. Of course there have been the same difficulties to contend with there as here—namely, the decrease of proprietors' incomes has led to reduction in garden staffs and expenditure in many cases, and the gardener's skill has in consequence been often seriously taxed to meet the altered circumstances. A resolute and able man does not, however, readily submit to be overcome by difficulties such as these, and the result is that both in keeping and productiveness gardens in Ireland will bear comparison with those in England or Scotland, where the labour and expenditure correspond in some degree. This opinion is not founded upon a partial survey of any one district, but upon evidence afforded by establishments visited from the north of Antrim to Cork in the south. Not only is this the case, but the enthusiasm and interest in gardening matters amongst the experienced practitioners is equally as great as here, though it is not fostered by so many opportunities of meeting in friendly competition as Great Britain. The amateur cultivators, too, are not so numerous in proportion as here, but there are indications of an advance in this direction, and considerable aid is being afforded by gentlemen in different districts who are fully conscious how much can be effected by increased attention to horticulture. In no part of the United Kingdom could more good be accomplished by the extension of horticultural skill and practice into the domain of the farmer than in Ireland, and wherever this fact has been grasped a material improvement is evident. To some of these matters I shall have occasion to refer again, and in the meantime I will describe the route adopted and the first calls by the way.

Several modes of reaching Ireland were suggested by friends, and that especially recommended where a long sea voyage is not objected to was via Milford Haven and Waterford or Cork. The date fixed, however, for the meeting at Leicester rendered it difficult and inconvenient to proceed that way. The other alternatives were by Holyhead to Dublin—the usual route—or via Stranraer and Larne to Belfast. As it was decided to commence explorations in the north of Ireland and journey south so as to avoid as far as possible travelling twice over the same ground, the Stranraer route was adopted as the most convenient, and as regards time this was also most suitable, as it enabled us to leave Leicester shortly before 10 p.m., and reach Ireland next morning in time for a clear day's work. There, however, the advantage ended, for it was one of the most uncomfortable journeys I have ever endured. The train accommodation was bad, though it is rare that fault can be found with the Midland Company in this respect. It necessitated two changes with all the inconvenience of removing luggage, &c., and beyond that for a great portion of the distance we had unpleasant travelling companions. Some satisfaction was, however, found in the fact that after leaving Dumfries the sun rose in a clear sky and revealed some much more pleasing scenery in Kirkcubright and Wigtownshire than I had expected to see. This was really enjoyable, and helped to compensate for other disadvantages, though it is not a route I would recommend to anyone who wishes to proceed direct to Ireland, as a portion of a tour through the lake district it would be a different matter. The short sea trip from Stranraer to Larne is a great recommendation to some travellers, and on a clear day with a brisk fresh breeze, as on the day I crossed it, is as delightful a passage as could be desired, the Scottish coast scenery being good, an extensive view of the fine Antrim coast is also obtained, with a distant glimpse of the peculiar Ailsa Craig, which rises from the sea like a column to the height of over 1000 feet.

Having landed at Larne, it is optional to proceed direct to the north by train, or to visit Belfast first: the latter course was adopted, and after a brief stay the journey was resumed soon after 11 a.m. to the north of Antrim, Coleraine and the Giant's Causeway being the destinations. This afforded the first opportunity of a general view of the land cultivation and crops, and a very favourable impression it created, for a large portion of the country passed through would rank with the best cultivated land in Ireland, and would, in fact, compare favourably with many districts in England. The prevailing crops are of course very different, and it seems at first as if all the country is entirely under grass, or, as it was at the time of my visit, under hay. That a large space is so occupied is shown by the agricultural returns, for in Antrim alone, out of a total cultivated area of 245,000 acres, over 100,000 acres are devoted to hay, either as permanent pasture or rotation. How well the climate and the land suit the grass is proved by the large return, and judging by the amount of hay in the fields in large conical mounds, it would be thought that the weight per acre would be nearly double what is seen in England. I am informed, however, that the average is about 2½ tons per acre.

Another very striking feature to a stranger is the Flax crop,

and as in August it was just turning yellow, and in some cases being pulled, it was conspicuous in all directions. Antrim is one of the greatest centres of Flax culture in the United Kingdom. In only two other counties in Ireland is a greater acreage appropriated by this crop—namely, Down and Tyrone—and though there has been a decrease in the culture of Flax for the whole of Ireland, Antrim shows the only increase for the past two years, about 16,000 acres being now occupied. Comparatively little Flax is now grown in England, and it is only in York, Lincoln, Cambridge, Somerset, and Dorset where the total runs into hundreds of acres, and in many of these districts it is decreasing. In Antrim and the province of Ulster generally it is said to pay a fair return upon labour and capital, with due attention to details, although it tests the land rather severely.

Potatoes had a better appearance in this district than in any other part of Ireland that I visited, partly, perhaps, because the rainfall is less, but principally because a better system of culture is adopted, though even here the "lazy bed" method was carried out in several places. Still, generally, more space was afforded between the rows, and, as I afterwards learned, more care was adopted in obtaining and selecting the seed tubers. In some parts of Antrim, and especially in the neighbourhood of Coleraine, poultry keeping is developing into an important industry, something on the plan adopted in France. Numbers of cottagers are now engaged in this, and the eggs are bought by agents of firms in Scotland and shipped direct to Glasgow. I met one worthy Glasgow merchant travelling with his wife and daughters, who assured me that the greater part of his business was transacted in this way, and that some thousands of pounds were directed to a comparatively small district in the north of Ireland every year for eggs and fowls.

The culture of small fruits for jam is also being tried in several places, Gooseberries especially being found to succeed, and where the fruit can be supplied direct to the jam manufacturers, of which there are several in Belfast, the return pays fairly well; but the disposal of fresh fruit is said to be difficult, and the carriage is rather costly. There can be no question about the Gooseberries succeeding, for examples were seen in many different gardens and situations, some exceedingly exposed, but in all they were alike satisfactory in health and productiveness. Respecting the orchards, or what were once worthy of that name, something will be said later on.

THE GIANT'S CAUSEWAY.

At Coleraine, one of the chief whisky centres, it is necessary to change for Portrush and the Giant's Causeway, and perhaps it will be a pardonable offence if I change the subject of these notes for a short time to give a brief description of a wonderful natural phenomenon a little outside gardening matters. A horticulturist's education is not complete without some knowledge of geology, and on many a winter's night in past years with fellow students and workers have I journeyed to London to attend lectures on that peculiarly fascinating science. Scores of others have similarly paid attention to the subject, therefore I know there are many to whom a little reminder of their geological studies will not be unwelcome, particularly as that to be introduced is familiar, by name at least, to all.

From Coleraine it is a short run by train to Portrush, and from thence an "Electric Tramway" is advertised to convey the traveller five or six miles by road to the Giant's Causeway. This electric tramway has recently been written about as much as the Causeway itself. The guide books refer to it in glowing terms as a wonder of the age. It is widely advertised in the time tables and newspapers all over Ireland. It was, therefore, with some disappointment that on the occasion of my visit an unromantic steam tram had temporarily taken its place, which lumbered along the road in a shaky and cumbrous fashion, affording a distressing discord with the surroundings, and altogether too suggestive of the steam rollers of our great cities to be agreeable. I did have the satisfaction of being returned to Portrush after my visit by means of the electric power, but even then some of the gearing gave way, causing a stoppage on the road. But on the outward journey defects of conveyances were soon forgotten in viewing the delightful prospect afforded as the road began to ascend the cliffs. The day was a grand one, the sky and sea were brilliantly blue, such as we see represented in Italian landscapes, or as Miss North depicted in so many of her tropical views, and it was difficult to imagine that we were really in the land of bogs and fogs, and not on the shores of the Mediterranean. Far away in the distance was the Scottish coast and the Heather-clad mountains. Presently we looked down upon the town of Portrush nestling in its snug little bay, and then the road wound along the edge of a precipitous cliff at a great elevation, with the sea rushing below into scores of wonderful caverns and strange rocky recesses, arched or perforated

by the action of the waves during long periods of time. A writer has described the Irish scenery as like the Irish melodies, "Sweet, wild, and almost sad," and this is true of some districts and under some conditions, but it does not apply to the view from this romantic cliff road on such a day as that when I was there, but it could be imagined how different it would appear on a stormy day in winter. Even the remarkable ruins of Dunluce Castle, perched on the verge of the cliff like a portion of the rock itself, had quite a cheerful aspect in the bright sun, and though all the wildness was there the sadness was undoubtedly absent.

The road now left the cliff, and turning inland rapidly descended until Bushmills (another whisky producing town) was reached, and the view became of quite an ordinary character. There was nothing to indicate the proximity of any natural wonder, and when the tramcar stopped in the yard of the Causeway Hotel it seemed as if all the picturesque scenery had been left behind. The cliffs looked from the land side more like our rounded chalk downs in Sussex and Kent, and the Giant's Causeway did not reveal its presence by anything of a startling character. Visitors are soon surrounded by guides very much in the way described by Thackeray, but now there are two rival hotels instead of one, and the contest for every passenger that arrives would be amusing in the extreme were it not bewildering to the unfortunate stranger who has gained no previous knowledge of the respective establishments. Having selected a guide, however, who proved an exceedingly well-informed man, and quite a geological authority, his only defect being an excess of energy and almost superhuman strength, combined with an evident desire to accomplish his task with the greatest possible speed. The result of this was that the individuals who committed themselves to his charge were led, or rather dragged, over rocks along the face of the cliffs into a wild bay, bundled unceremoniously over slippery ledges, and into dark and fearsome caves and caverns, until he was almost entreated to pause. Still the Causeway had not been seen, this was only the prelude: another ascent was made to the neighbourhood of the hotels, and then a winding path gradually descending along the face of the cliff towards the shore was taken, and in about ten minutes our guide said, "There, that is the Causeway," pointing to a low and rocky portion of the coast in the distance. Then it began to dawn upon us that all the writers and guide-book compilers, even our geological friends, must have been in league to create a deceptive sensation, for anything of a more ordinary character when first seen could not be imagined. A nearer acquaintance with the phenomenon, however, soon reveals its remarkable character, and the visitor feels amply repaid for his journey. To describe the effect adequately is impossible, but to give an idea of it has been attempted. "It looks," said Thackeray in his "Irish Sketch Book," "like the beginning of the world somehow; the sea looks older than in other places, the hills and rocks strange, and formed differently from other rocks and hills—as those vast dubious monsters were formed who possessed the earth before man. The hill-tops are shattered into a thousand cragged fantastical shapes; the water comes swelling into scores of little strange creeks, or goes off with a leap, roaring into those mysterious caves yonder, which penetrate who knows how far into our common world. The savage rocksides are painted of a hundred colours. Does the sun ever shine here? When the world was moulded and fashioned out of formless chaos, this must have been the bit over, a remnant of chaos." Of course everyone knows that the Giant's Causeway is composed of basalt, the produce of extinct volcanoes long prior to the age of man, and judging by the effects there were, indeed, troublous times in Ireland in those days. This basalt, poured out in a liquid form, cooled gradually, and crystallised, as it were, into a wonderful series of polygonal columns, of which it is said there are over 40,000, extending from the cliffs to the sea, there dipping down and passing, some suppose, to Staffa and Fingal's Cave in the Hebrides, where a similar structure is reproduced. The regular form of these columns, which vary in height from a few inches to 20 feet or more, is very striking. The pentagons and hexagons predominate, but some of other shapes are pointed out, and one amongst the 40,000 is triangular. They are also in nearly equal segments, the ends being concave and convex, so that they fit like an elaborate piece of masonry. For a good portion of the space they form an irregular kind of floor, but in other parts they are piled up to a considerable height, assuming numberless forms, which in many cases have received fanciful names. Altogether, the Causeway may be taken as one of those natural peculiarities that must arrest the attention even of the thoughtless, and it is a place in which a student could wander and meditate for days.

There is not, however, much "gardening" in this disquisition, but something has to be yet related, for a garden was found on the top of a cliff, fully exposed to the north, within reach of the sea spray, and yet where fruit, vegetables, and flowers were cultivated with as much success as in many more favourable situations.

But a description of this must be reserved for my next letter, as this has already exceeded the limits.—LEWIS CASTLE.

(To be continued.)



CYPRIPEDIUM HYBRIDUM CASTLEANUM.

MR. R. A. ROLFE of Kew is responsible for the above name which has been bestowed upon a hybrid that has recently flowered in Messrs. Sander & Co.'s nursery at St. Albans, and was shown at the Royal Horticultural Society's meeting on Tuesday last. An experienced Orchid grower says, "It is one of the most distinct and delicately coloured hybrids I have ever seen, and there would be no fear of seedling *Cypripediums* becoming too common if they were all as well marked as this." The following description indicates the chief characters fairly well, but it is difficult to convey an accurate idea of the peculiar colouring in a verbal description.

It is a hybrid from *C. superbiens* (Veitchi) and *C. hirsutissimum*, and shows a remarkable combination of the characters distinguishing those species. It has a somewhat heart-shaped dorsal sepal, $1\frac{1}{4}$ inch wide by $1\frac{3}{4}$ deep, suffused with a soft delicate bluish purple tint, with a few slightly deeper purple streaks, and faint green veins underlying the purple suffusion. There are also some dark dots at the base running into the veins. The tip is pale green, the margin has a number of white downy hairs, and the inner surface is also covered with a slight tomentum. The lower sepals are small and greenish. The petals are $2\frac{3}{4}$ inches long by five-eighths inch broad at the widest part near the points. They are slightly deflexed, partaking somewhat of the *C. hirsutissimum* character, but very distinct in colour, soft purple, green at the base, with fine dark spots at the base, and dark marginal hairs. The lip is suggestive of *C. superbiens* in shape and colouring, but is a distinct shade, and is dotted and suffused with purple. The leaves are long and narrow, regularly and prettily marbled on light green. The great charm of the flower is in the peculiarly soft and pleasing bluish purple tinting, which is quite unique.

CYPRIPEDIUM HYBRIDUM POLLETTIANUM.

This was also from Messrs. F. Sander & Co.'s nursery, and the same authority is responsible for the name. It is a hybrid from *C. calophyllum* crossed with *C. oenanthum superbum*, and therefore possessing a most interesting parentage, both the forms named being themselves hybrids, *C. calophyllum* from *C. barbatum* and *C. venustum*, and *C. oenanthum superbum* from *C. insigne Maulei* and *C. Harrisianum*. *C. oenanthum superbum* is generally regarded as one of the finest hybrids ever produced; but some may probably consider the new comer as, in some respects, an improvement upon that in richness of colouring and general appearance. The dorsal sepal is broad, rounded, margined with white, rich dark crimson, with chocolate spots. The petals are very dark, with three dark dots on the upper margin, the lower half at the base being of a peculiar transparent green with a few dots; the lip is very dark, and the whole surface of the flower has a polished shining appearance that in a bright light is very effective. It is undoubtedly a grand acquisition.

CYPRIPEDIUM HYBRIDUM MAYNARDI.

A beautiful hybrid between *C. purpuratum* and *C. Spicerianum*, the flowers taking the general form of the latter parent, but evidently influenced by other in a material degree. The dorsal sepal is rounded in outline, but the lower part is reflexed and white, with a deep crimson central vein, and a few lighter ones; the base green. The petals are short, greenish at the base, dotted with purple, purplish towards the tip, edged white, the margin undulated. The lip is dark purplish, with a purple staminode. The leaves are about $1\frac{1}{2}$ inch broad and 5 to 6 inches long, faintly marbled with dark green on a lighter ground. This is from the same establishment as the preceding, and we understand bears the name of a hybridist who has been working assiduously amongst the Orchids for some years.

CYMBIDIUM TRACYANUM.

An exceedingly vigorous plant of a new *Cymbidium* created a little sensation at the R.H.S. meeting on Tuesday, the size of the flowers, length of spike, and general bold characters at once commanding attention. Doubts were freely expressed, however, with regard to its being a true species. One experienced orchidist

considered it as "a form of *C. longifolium*," another dubbed it as "merely a fine *C. giganteum*," a third authority fancied he could discover "a nearer relationship to *C. Hookerianum* in the form, size, and markings of the lip." It is quite plain from these different opinions that the plant was not a readily recognised form of any well known type, and it was admittedly distinct if only as a variety, while it was unquestionably handsome. In the growth and foliage with the smooth stem or leaf bases it resembles *C. longifolium* or *giganteum*, but the flowers are of great size, 5 inches or more in diameter, with broad sepals and petals evenly and strongly veined or spotted in lines of a reddish tint on a yellow ground. The lip is long and broad, pale yellow spotted with red. The raceme was about 4 feet long, bearing numerous flowers. It was shown by Mr. H. A. Tracy, Amyard Park Road, Twickenham.

EPIPHRONITIS VEITCHI.

MANY handsome and peculiar hybrid Orchids have been raised by Messrs. J. Veitch & Sons at Chelsea, and the one here figured, though it cannot be compared with their imposing *Cattleyas* and choice *Cypripediums*, yet possesses a considerable share of interest. The characters of *Epidendrum radicans* and *Sophronitis grandiflora* seem so different to a casual examination that without some intimate knowledge of their botanical relationship it would not be thought likely they would cross readily. A cross was, however, effected between these two plants, and the result was the hybrid



FIG. 63.—*EPIPHRONITIS VEITCHI.*

which has received the singularly appropriate compound name *Epiphronitis Veitchi*. The plant was shown at the Royal Horticultural Society's meeting on June 24th this year, when it was certificated by the Orchid Committee, and attracted much notice owing to its curious parentage. The *Sophronitis* is said to be the seed parent, but in habit, growth, and leaves the hybrid resembles the *Epidendrum*, except that it appears to be dwarfer and not so strong. The flowers are about the same size of the *Epidendrum*, but have taken more of the colour of the *Sophronitis*, being much darker and richer than the first named. The sepals and petals are also broader and more rounded, the lip four-lobed, but not cut or serrated at the margin like the *Epidendrum*; it is also yellow in the centre, with a few dark spots. The woodcut (fig. 68) was prepared from a drawing taken of the flowers on the day the plant was shown by Messrs. Veitch & Sons.

The *Epidendrum*s are not popular Orchids, if we except *E. vitellinum* and its variety *majus*, but it is strange that more experiments have not been undertaken in this large family. At present very little has been done, and the *Epiphronitis* is the first result of any consequence that has come to my knowledge.—L. CASTLE.

A NIGHT AT CHILWELL.

WE sometimes read of a day being spent here, a week there, and of a journey of so many miles after this, that or the other, of which interesting details are recorded, but not often have we any narration in the Journal of a "night" spent anywhere, so the heading of these notes will at least be fresh if the matter happen to be commonplace or stale. The heading is further strictly accurate, for my sojourn at Chilwell embraced about fourteen hours of darkness, and only four or five of

daylight, and something of what I heard during the long night, and saw during the too short morning, may possess a small measure of interest to some readers.

"Come and see us on your way from Leicester to Hull," was the invitation of Mr. A. H. Pearson. It was of no use my telling him I had about enough of Chrysanthemums, for he only rejoined, "Oh! bother the mums, come and see me;" and therefore it came to pass that on a dark night in November I found my host awaiting me at Beeston Station, and ten minutes afterwards I was established in his cosy home. This, as I found in the morning, is a substantial and commodious farmhouse sort of building, upwards of 200 years old, surrounded by green fields, a little distance from the family home at the nursery.

"Ah," said my host on our arrival overnight, "this is my brother Charles, I think you have seen him before; he is the 'floral partner,' you know." Yes, I thought I had seen him before, and did know he had something to do with Chrysanthemums, Zonal Pelargoniums, Orchids, Eucharises, Roses, and various other plants that are grown, and grown well, in the several fine structures under his control. All these, he said, I was to see in the morning. "Stop a bit," observed A. H., "you are not going to spend all the time among the old mums; why they are damping like steam," and went on to intimate there were old orchards and new nurseries of young trees worth seeing, and must be seen, also Siberian Elms that were going off fast through an advertisement in the Journal. "Siberian Elms, what are they, and what are they like?" was my inquiring observation. "As to what they are like you will see in the morning; but where the stock came from we do not know. We only know that the original trees were planted by my grandfather, and no other trees have made the growth that they have, and we know of no others that grow so freely in good or poor soil. Our soil is good, and if you want to see trees in poor soil, or almost no soil, look at the avenues of them in Nottingham Park." It so happened I had seen these, admired the trees, wondered what variety of Elm they represented, and now in the night's conversation discovered they were known as "Siberians."

Another thing I got to know—namely, that there is only one Chilwell in the world, at least that is recognised by postal authorities, and that a letter simply addressed to the "Nurseries, Chilwell," is sure to find its way to Messrs. Pearson, no matter where it may be posted. This is a very old family, for there have been Pearsons at Chilwell for centuries, and the business has been long established. For years, or perhaps generations, what may be termed a good quiet local trade was done, but the late Mr. John Pearson, one of the finest men of his time in the horticultural ranks, saw there was a world for his wares beyond his locality, and he determined to reach it. He half frightened some of his timid contemporaries by advertising, but made and left his business great, and his sons intend to keep it growing. They appear to inherit their mother's cool judgment and their father's spirit of enterprise. So does the elder brother, Mr. Henry Pearson. Entering into a good local business at Beeston, he, like his father, was determined to extend the trade in the same way, and now, as Foster and Pearson, it is known not only all over the kingdom, but far beyond its limits. This fine business has been built up by the energy of one man, and the good work he has done, and who is now its head in the prime of life.

The mention of the mother of the present family reminds that she is a suffering invalid, a kind, good lady, and her daughters are like her in doing what they can for the poor and afflicted, and they do much more than can be mentioned here. To their house the distressed instinctively turn for advice. A case occurred at the time of my visit that is sad, yet in one respect a little amusing, and I came to know about it in this way:—As the evening went on, said C. to A. ("C" standing for Chrysanthemum Pearson, if you like, and "A" for Apple Pearson): "I must be off. I don't intend going to bed much before daylight if I sit up for a week till I catch that scoundrel and give him a good 'lacing'; so you be across early to attend to things, as I may not be about in the morning." "All right," quoth A., "off you go." And then he told me the story. A drinking, lazy hanger-on in the village not only starved his poor wife but beat her, and she in her trouble went to the Nursery and was taken in the house to live for a while and make herself useful. Some time about one o'clock the previous morning the scoundrel, seeing a light in the sick room of Mrs. Pearson, dashed a whole brick through the window. Feeling sure the dastardly trick would be repeated a policeman was set to watch on one side of the house, Mr. C. taking the other. About the same time in the morning of my visit the fellow entered the gate, and just as he was raising his hand to dash another brick into the room he was felled to the ground by the policeman, who was hiding in the bushes conveniently near. The next thing was to take him to the station; but as he refused to rise from the ground he was dragged through the mud, leaving a trail as if made by a bag of Potatoes. This method of progression, however, did not suit Mr. C., who, as he said, "didn't see the fun of dragging a log like that a mile through the mire," so concluded he would either "make the fellow walk or make him sore," and commenced "lacing." "I had a good stick," he went on to say, "and didn't let him have it. I laced him just as well as I could, and kept on till he was glad to get up and walk away with his captor. Poor beggar, he must be sore! But didn't it serve him right? He might have killed my mother." As the "lacing" was the result of the man's own stubbornness we thought it richly served him right, and he had a worse night than I had at Chilwell.

My evening was indeed a most pleasant one, and, well, rather long, as Mr. A. H. is a very good talker, and knows as well as most persons do what he is talking about, especially when his mind turns on Apples. It

was the planting season. "And how are the trees going?" I asked. "Going," was the reply, "We never had anything like it. Luckily I foresaw what was coming, and kept increasing the stock more and more; but have only just managed to keep ahead of the orders, but I have planted three more fields, and hope to meet all comers in future." "How much land have you, Mr. Pearson?" "Oh, about 300 acres, but only about half under orchards and nursery stock. The rest we farm, and change about, as there is nothing like fresh soil for trees and shrubs. You can manure as you like, but fresh ground is the thing for firm clean growth, as you can see for yourself in the morning." I began to think I had a good deal to see in "the morning," and very little time for seeing it. And so it proved. It was a race and a rush through the houses, and over miles of ground, for the fields are widely scattered. In noting briefly what was seen it will be convenient to begin at the beginning—at home; and from Mr. A. H. Pearson's house to the main road which leads to the nurseries we pass along the avenue of Elms.

The trees were planted about thirty-three years ago, "Siberians" at uniform and wide distances, with other sorts between them, but these others are all gone, the Siberians overgrew them, and now occupy all the space. This is apparently a very free-growing variety of the Wyeh Elm (*Ulmus montana*), but is taller, and makes a fine tree much sooner. One of the stems, though not measured, was no doubt 8 or 9 feet in circumference, perhaps more. As an avenue, park, or shelter tree for orchards (but distant from them) this Elm must be one of the best, and it thrives as well in towns as any other of the genus, and better than most in exposed positions and near the sea.

Passing along to the nursery we glance at a very large and substantial building—the seed and bulb warehouse, root store, and what not. "That," remarked Mr. A. H., "came out of Tulips. My great-grandfather was like some others in his time, mad on them, and with the proceeds of his sales erected the building." It is conceivable that if all the florists' Tulips now in England were sold they would not realise as much as did that collection, for the prices have fallen, though there are not wanting signs that those splendid flowers are steadily regaining some of their lost popularity.

Now we are in the nursery, with its large and numerous glass structures, apparently as good as they were thirty years ago, and all well filled. We pass down a range of Orchid houses, through a stove, into a large vinery, with banks of Maidenhair Fern on each side the central path; rush through the Stephanotis and Eucharis house, see the finest stock that is to be seen of the fine old plant *Ardisia erenulata* that retains its clusters of red fruits for a year; peep down the pot Vine house and Maréchal Niel Rose house, resembling avenues of strong growth and canes; glance through Zonal Pelargonium house, which was brilliant with the best and newest varieties; pause at a houseful of the most beautiful of hardy variegated plants, *Yucca filamentosa variegata*, which they know how to increase at Chilwell, and enter the great Chrysanthemum house. There we have to "go slow," for with two Pearsons in front and their good man Pithers behind there is no escape. You have to see everything, and hear something, too. "Now, look here, isn't this a beauty? I call it a real good thing," says C. "I don't care a bit for it," answers A. "Oh," retorts C., "You go on and talk about Apples." But there were some "good things" in the Chrysanthemum house, and another house, a vinery, 100 or more feet long, was filled with good Apples. A pair of happy brothers are these, one among the flowers and the other among the fruit, and both may be proud of their produce.

The Chrysanthemums were splendidly grown though the "damp fiend" was among them; but he is to be conquered another year with more hot-water pipes and shading. Trained specimen plants at one end of the house "fit for Birmingham," the centre occupied with single-stemmed plants bearing blooms, not a few of which were equal to any that have been seen in any stands, cut-back plants in front of them, models in their way for grouping, and sides filled with great floriferous bushes innocent of manipulation in disbudding. Cartloads of flowers could be cut from these and others reserved for that purpose, and which have to be grown to meet the great demands of the "lace hands" in Nottingham. Such is the general character of the Chrysanthemum Show at Chilwell. For particulars there is not much room, but a few of the newer varieties of proved worth or promising merit may be referred to. Among the incurved all the Queen family were extra fine, notably, perhaps, John Lambert, which in its true form is distinct, being smoother and paler than Golden Queen; but all the "Lamberts" one sees are not as they should be, and either the wrong one has been grown under that name or the right one gone wrong. Also in superior form were Mrs. Coleman, C. Gibson, Lady Dorothy, and all the Princess of Wales family, Refulgence, and White Venus.

In the Japanese section perhaps Eynsford White had no superior in the collection, and Puritan, white, more or less tinted, stood out boldly. W. W. Coles was in brilliant garb; W. H. Lincoln, yellow, in the form of Stanstead White, was conspicuous; and Tacoma, G. Atkinson, Lilian B. Bird, Zillah, Mrs. W. S. Sargeant, Kioto, and others of the newer sorts were giving much satisfaction. For decorative purposes *Massalia* will spread, it is of the character of William Holmes, but brighter.

Among Anemones Gladys Spaulding is of dwarf habit, and had eight to ten exhibition blooms on a plant, better than where only two or three were allowed, as these were coarser. Mrs. Judge Benedict, M. Pankoucke, Mrs. Robert Owen, and Thorpe, jun., were noticeable, among others, that were good in this section, single varieties grown in a manner not often equalled, and some of the bushes must have contained two or three thousand flowers. Two of the favourites, which everybody wants who sees them, are Mrs. A. H. Bates, pure white, and

Marguerite, silvery white, a Chilwell seedling. Dozens of others must be passed, and they will continue in beauty till Christmas. Altogether the collection is large and choice, most of the varieties being represented in their best form, and as Mr. George Bolas says in a letter before me, "it is a treat to see them, and to go round with Pithers, who freely tells how the plants are managed."

We have yet the fruit and trees to see. As before mentioned the fruit Show was in a vinery, and extensive and excellent was the display, nearly all the best varieties of Apples and many of Pears being admirably represented. In the midlands some of the more popular Apples would not be recognised from their names alone by southern growers. For instance, the midland name for Devonshire Quarrenden is Waterloo Pippin; Court Pendu Plat is Woolaton Pippin; King of the Pippins is Pike's Pearmain; Duchess of Oldenburg is The Russian; Fearn's Pippin is Clifton Nonesuch; and Queen Caroline is Spencer's Favourite. The latter, however, Mr. Pearson says is the true name, as this beautiful Apple was raised by a Mr. Spencer in Nottinghamshire. Conspicuous in the "Apple show" is Newton Wonder, of the character of Dumelow's Seedling but larger, better in colour, and decidedly sweeter. This variety has been certificated by the Royal Horticultural Society, and is probably a coming Apple for the million. New Bess Pool was very fine and wholly distinct from the old, and the huge healthy symmetrical trees in the orchard suggest that this variety would make grand specimens for parks. Bright were the dishes of Lord Lennox, a small scarlet Apple of which large heaps may be seen in midland and northern markets. It is not a Cox's Orange Pippin or anything of that kind in flavour, but finds favour with the multitude, and the tree is one of the best of growers. The new Northern Greening is a Chilwell favourite, and the fruits are remarkable for symmetry and weight. Of Bramley's Seedling, too, there were fine dishes, as indeed there were of scores of others. But Mr. Pearson, like many others, is firm in the belief that by far too many varieties are grown. Therefore he has excluded scores from his catalogue, and his short selections are very good.

Still, we have to see the trees, which involves a drive of some miles—at least it would to see them all, and only an hour or two at disposal. Off we go with a dash and a splash down dirty lanes and over hummocky fields, for Mr. A. H. seems to go the nearest way with his trap, the same as when he has a day of hunting. A "spill," I thought, must be my fate that day, and the only little comfort I had in shaky moments was in contemplating the softness of the ground. However, we reached the "new fields" safely, and the sight was worth the jolting. Open to all the winds that blow are these nursery fields of fruit trees. The soil is a free, yellowish, generous loam, and bastard trenched 2 feet deep. Either two or three fields, or upwards of 20 acres, were occupied with trees in various stages from stocks up to two and three years old, and another was in preparation. They are surrounded with a broad grass glade, and cross roads of grass for driving. The lands or stretches are set out with exactitude and uniform in size, so that it is easy for the owner and his men to tell the number of trees in each. Healthy and hardy the trees grow in this good soil and air, and not a speck of mildew was to be seen, even on the "breaks" of Roses. When we see such an extension of tree raising as this, and remember others of the same kind elsewhere, there is no room left for doubt that fruit culture has commenced in earnest at last, and that a revolution in hardy fruit production has fairly set in in this country. Will it continue? It is bound to do so, because thinking persons know very well that if they do not plant young trees they will have no chance in the markets, as in a very few years' time the produce of the old and exhausted will not be "looked at" there; also the better the samples that are placed before the public the greater will be the demand, for the supply of high-class produce will create it, as is the case with other commodities. Business people do not wait to be asked to produce what is wanted, but provide what is good, and in that way tempt, indeed, so to say, compel purchasers. So it will be with fruit, and just in proportion as it is good in appearance and quality will the consumption increase, and the best can only be had from young trees planted in generous soil.

We go on to the old nursery of 10 acres within walls, but nearly all cleared. It is now to rest for a time, and only trees will be grown against the walls in the immediate future. Next we drive through the old orchards with fattening cattle grazing under the trees, and the herbage shows they keep the land fertile. It is here we see the huge and symmetrical proportions of both the old and new Bess Pool Apples, the latter the finer and more regular bearer, and just the tree for park scenery. Suggestive for the same purpose are gigantic trees of the "Beurré Grey" Pear, the foliage of which changes to crimson and gold in the autumn. Our next turn is homewards, and we glance at the collection of trees for avenues and parks—Elms, Limes, and most other trees, thinly planted and cared for, and stop to look at the plantation of variegated Yuccas which grow uninjured from year to year, and their like is not to be elsewhere seen. On to the station we pass the "glass nursery," and find the road lined with carriages, gigs, wagonettes and omnibuses which have brought loads of people to see the Chrysanthemums. I now think I have said enough, and after this tormentingly long narration cannot hope that Mr. A. H. Pearson will ever again ask me to spend a "night at Chilwell."—A WANDERER.

EDINBURGH INTERNATIONAL EXHIBITION.

THIS Show is sure to be such an important one that any defects of whatever nature are certain to cause a large amount of dissatisfaction and disappointment. It may truly be said of the ordinary autumn

Shows held in Edinburgh, Thither the tribes go up, and the "Internationals" seem to gather together alike from "little Wales," Ireland, England, and auld Scotland cultivators of every denomination—fruit grower, florist, and vegetableman. It does not require one to have much of the spirit of the seer to prophesy that the Exhibition of next autumn will eclipse any yet held in the capital of Scotland. I do not so particularly refer to the fruit, which will doubtless be in advance, as to other sections. The chief plant prizes ought, and surely will, draw not only contributions from Glasgow, but probably from Newcastle, Yorkshire, and perhaps further south. There will be some dozens of collections of vegetables, and of the hundreds of single dishes it would be hazardous to make a guess how many. Cut flowers are less generously provided for, but the entries are sure also to be large and good.

The remarks made on the fruit classes last week are not totally uncalled for, though it is only fair to note that the point of view occupied by the compilers of the schedule and by the writer are necessarily somewhat different; at the same time it must be conceded that "haste" is palpable on every page. It would appear as if the Committee entrusted with the getting out of the prize list had been working against time, and no revision made of the proof sheets. It is only charitable to hope so.

Referring to Class 1 and Class 2 I certainly understand it to absolutely reserve the latter class to gardeners and amateurs whose means are limited, and who would not feel warranted in entering the lists against those whose means of producing Grapes in quantity are, if not unlimited, yet of the most ample kind; however, the necessity of such a class is at the present day not very obvious. The wording of the collections is at one with several other items—as for instance No. 7, which is perfectly explicit; No. 8, which is vague; and No. 9, which is explicit in the superlative degree.

As to the collection of hardy fruit, I do not think any objection can be taken to the wording, nor can I see any difficulty in assuming the meaning to be any kind of fruit, such as Figs, Peaches, and Apricots. These are all grown in the "open air," though a wall is required. In Scotland mostly all Pears are grown as wall fruit, and a very large number of Apples are similarly cultivated. The great majority of Plums and Cherries in the same way have the benefit of a wall. These are all shown at the ordinary autumn exhibitions in the class for a collection of hardy fruit grown in the open air. With regard to the collection of Plums, though it will be impossible for cultivators in the south of England to show on the same day Coe's Golden Drop and Early Prolific, or White Magnum Bonum and Early Orleans, the majority of northern cultivators will not experience much difficulty in doing so. The reason for these collections, as well as for the dishes of late half-grown Pears and Apples, appears to be the outcome of a wish on the part of the "Caledonian" to popularise the particular sorts which received the greatest number of votes at the Apple Congress in 1885, and the Plum Congress in 1889. You will notice they are all good, Court of Wick Apple being the only one to which exception can be taken. At the same time it might have been perhaps as well if the Executive had dispensed with the late, and substituted some of the newer and better early varieties, many of which will find their way into the collections of Pears and Apples.

I now pass on to points which are not touched upon by your correspondent, who seems to have paid attention alone to the fruit classes. But what can anybody make of No. 128, "Table of Plants, 20 feet by 5 feet?" There it stands in all its bald uncertainty. Now in 1889, the first prize for a table of plants was awarded to a table which for effect should have been third, and in 1890 the second prize was awarded to an arrangement which for quality should have been first. The judgment in each case was correct, on the assumption that the Judges in 1889 had quality mainly in view, and that in 1890 quality occupied quite a secondary place. As further examples of indefiniteness, we have "Eight Foliage Plants, in pots not exceeding 10 inches," "Six Orchids, in bloom," "Three ditto," and not a single word as to the necessity, or otherwise, of distinctness in species or variety; while we have "Four Caladiums, distinct," "Two Crotons, of sorts," "Four Palms, sorts." In the cut flower section the same indefiniteness prevails. Thus we find "Twelve Cut Roses, sorts," "Twelve Fancy Pansies, distinct var.," "Six Spikes Phloxes, named." These are only a few examples.

Then there is a rule (No. 5) to the effect that "Undue dressing will disqualify." Surely such a rule is without meaning. It is a perfectly well understood fact that the exhibitor of whatever kind of flower will "dress" it so as to present it in its most attractive form. A large amount of the success in growing and exhibiting certain flowers is attended by the judicious dressing to which they are subjected. And so with vegetables, the best "dressed" and most effectively arranged collections have a very great advantage over those less judiciously handled, and in some degree the same remark applies to fruit.

While writing I may be allowed to make a suggestion that the names of the Judges should be communicated to the gardening public some time before the Show. There are judges who have a preference to well finished Muscats, others whose sympathies lean to the side of black Grapes. With some the inclusion of fine Grapes and fine Apples in a collection covers all deficiencies in the remaining dishes. We have vegetable judges who look upon a collection of vegetables with eyes obscured by the surpassing excellencies of a dish of Leeks or of Onions, while a couple of dishes of rough Apples in a collection, if they are big enough, forms the *pons asinorum* of some hardy fruitists. Nor is it any uncommon occurrence to find the legitimate single dish varieties set

aside and prizes bestowed to other altogether different varieties. Then exhibitors of florist flowers ought to be assured that whoever are appointed to adjudicate upon these are up to their business. The classes for Dahlias, for Gladioli, and for Roses are sure to be well filled and keenly contested. It is surely not too much to expect that none of these are left to the tender mercies of those who may be expert with one flower and with little knowledge of the others. I am afraid I have unduly encroached on your good nature, but I can assure you I have tried to condense my remarks.—AN INTENDING EXHIBITOR.



EVENTS OF THE WEEK.—Horticultural gatherings are becoming less frequent now, and after such an exceptionally busy day as Tuesday last it might be expected that the business to be transacted before Christmas was nearly concluded. The General Committee of the National Chrysanthemum Society will meet at Anderton's Hotel on Monday, December 18th, at 7 P.M.; and on Wednesday, the 17th inst., the floral fête and bazaar, for the benefit of the Holmes Memorial Fund, will be held in the Royal Aquarium, Westminster.

— **SHIRLEY HIBBERD MEMORIAL.**—In response to the invitation from the Council of the Royal Horticultural Society a largely attended meeting was held in the Lindley Library, Victoria Street, on Tuesday last, at 1 P.M., Sir Trevor Lawrence, Bart., M.P., in the chair. After some introductory remarks by the Chairman, Dr. M. T. Masters referred to the valuable services rendered to horticulture by the late Mr. Shirley Hibberd, and proposed the following resolution, which was seconded by the Rev. H. H. D'Ombraim, and carried unanimously:—"That in the opinion of this meeting it is desirable to establish a memorial commemorative of the disinterested labour of the late Shirley Hibberd, and as affording some expression of our gratitude to him and of our respect for his memory." Some discussion followed as to the form the memorial should assume, the general feeling being in favour of a portrait of Mr. Hibberd to be placed in the Lindley Library. It was, however, resolved to entrust the arrangements for collecting the fund and a consideration of the various suggestions to a committee comprising the Rev. W. Wilks, with Messrs. J. Douglas and G. Paul as representing the Council, and Dr. Masters with Messrs. Marshall, Collingridge, and Dean on behalf of the Fellows.

— **GARDENERS' ROYAL BENEVOLENT INSTITUTION.**—We are pleased to hear of another purchase of £300 Consols, making a total of £25,000 standing on in the names of the Trustees, thus giving good security to those gardeners who have subscribed to the Institution in case distress should overtake them. We are also glad to hear that Baron Schröder, Vice-President, has promised to preside at the fifty-second annual meeting of the members, to be held at Simpson's, Strand, on Thursday, 15th January, next at three o'clock, and that N. N. Sherwood, Esq., is to take the chair at the friendly dinner to be held after the election the same day at six o'clock.

— **THE WEATHER.**—Since the severe frosts at the end of last month, by which much damage was caused to shrubs and outdoor plants, there has not been anything unusual to record. Moderate frosts, dull days, with occasional fogs have prevailed in the neighbourhood of London, and a slight scattering of snow early in this week.

— **SEVERE FROST IN SURREY.**—The weather here on the 28th ult. was phenomenal with regard to the severe frost. We registered at four o'clock on the above date 24° frost Fahr., and at six o'clock the mercury showed 6° below zero. After that time it gradually rose above zero. In the Rev. W. Wilks' garden at Shirley, two miles from here, the thermometer registered 2° below zero; at Warlingham, four miles, 5½° below, and at Riverhead, near Sevenoaks, 1° below zero. The shrubs here are turned quite black, the Aucubas especially seem ruined. I may mention our thermometer registered the above at 6 inches from the ground. Enclosed herewith are a few leaves of shrubs and Ivy to show the result.—R. H. COPPIN, *Addington, Croydon*. [The temperatures recorded are extremely low, but the thermometer is too near the ground. The leaves sent are blackened, and evidently the injury is severe.]

— **LONDON FOGS AND PLANT LIFE.**—It is stated that the Royal Society has granted £100 towards the expenses of a report upon this subject now being prepared by the Royal Horticultural Society.

— **GARDENING APPOINTMENTS.**—We have received an intimation of an appointment to a garden in Cornwall, which will be inserted if our informant sends us his name and address, not for publication.

— **THE EDINBURGH CHRYSANTHEMUM SHOW.**—This, we are pleased to learn, was this year a financial success. The visitors during the three days numbered 35,000, Lieutenant Dan Godfrey and his band proving a great attraction. From £120 to £150 is the expected surplus. Nearly £300 for music and over £100 for fitting up the Show building are large items in expenditure, but no doubt it pays in Edinburgh.

— **DUTCH CODLIN APPLE.**—Mr. A. Harding writes from near Peterborough: "This has been the worst Apple year in this neighbourhood that has been known for many years. We had a very light crop. In a few old orchards in this village the produce from perhaps a hundred trees was only a few bushels. My best tree was Dutch Codlin; it had five bushels of good clean fruit, although an old, half worn out looking tree. I believe in manuring orchards, even if they are on grass."

— **FRUIT ROOM.**—I shall be obliged if any of your experienced readers will answer the following questions through your valuable *Journal of Horticulture*:—Is a dark, dry, underground chamber with a thorough draught better for keeping fruit than a room in a dwelling house having full daylight, a higher temperature, but no through draught? 2, Are shelves for laying Apples, &c., on, separately and singly, trellised or solid shelves, or barrels and casks, better for keeping? 3, Should Apples have the oily exudation wiped off them at any time during their "captivity"?—H. S.

— **HAYWARDS HEATH HORTICULTURAL SOCIETY.**—A highly satisfactory balance-sheet was submitted to the members of the above Society at their annual general meeting held at Mr. Wilmot's school-room last Friday evening. Notwithstanding that the receipts at the gates were more than £10 below the amount taken at their first show last year, owing to the weather, the creditable balance of £23 14s. 5d. remains in the Treasurer's hands. Total receipts, £206 7s. 9d.; and £116 16s. was paid in prizes.

— **REPORT OF WEATHER DURING NOVEMBER 1890.**—The weather during the past month was very mild until towards the end, when some sharp frosts and slight falls of snow were experienced. The sharpest frost was on the morning of November 29th, when 16° were registered. Rain fell upon seventeen days against six days of November, 1889, the maximum in any twenty-four hours being 0.52 on the 23rd. Minimum 0.01 on the 10th. Total amount during the month 2.66 against 0.87 of November 1889.—E. WALLIS, *The Gardens, Hamels Park, Buntingford, Herts.*

— **ROYAL CALEDONIAN HORTICULTURAL SOCIETY.**—At the annual meeting of the Royal Caledonian Horticultural Society, held in Edinburgh the other day, it was stated that £142 had been added to the funds during the year with subscriptions, and £200 it was proposed to save next year. The fund for the International amounts to about £700, the proceeds from that meeting being expected to make up the £1223 offered in prizes. Asked what about expenses, Mr. Young, the Assistant Secretary, humorously remarked they would save by drinking lemonade next year.

— **CHISWICK GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION, SESSION 1890-91.**—Mrs. S. A. Lee, Chiswick, has, with the object of encouraging original research and observation, again very kindly offered a sum of £15 10s. to be distributed in prizes for essays on horticultural subjects from members of the Association. Class 1, for the best essays on "Horticulture, its Influence on the Masses." First prize, £2; second, £1 10s.; third, £1 2s. 6d.; fourth, 12s. 6d. The competition in this class will take place, under supervision, in the Council room of the Royal Horticultural Society, on the evenings of February 20th and 21st, 1891, between the hours of seven and ten. Class 2, for the best essays on any horticultural subject at the discretion of the competitors. First prize, £2; second, £1 10s.; third, £1 2s. 6d.; fourth, 12s. 6d. Class 3, for the best essays on any horticultural subject at the discretion of the competitors (members under twenty-three years of age). First prize, Nicholson's "Dictionary of Gardening," four volumes, value £3; second, £1; third, 12s. 6d.; fourth, 7s. 6d. If preferred by the winners books on gardening subjects to the value of the second, third, and fourth prizes will be selected.

— PORTSMOUTH HORTICULTURAL SOCIETY.—The Summer Show of the above Society is announced to be held in the Victoria Park, Portsea, on July 8th, 9th, and 10th, and the Chrysanthemum Show in the large Drill Hall on November 4th, 5th, and 6th, 1891.

— WEATHER IN THE NORTH, December 1st to 8th.—A dull, cheerless week, with little frost and less sunshine. The thermometer has on several nights been at 32°, and 3° of frost were registered on morning of the 4th. Ploughing has been pushed forward in the district.—B. D., *S. Perthshire*.

— THE WEATHER.—The temperature on the 30th of November was exceptionally low. A Negretti and Zambra's self-registering thermometer 4 feet from the ground registered 17°, and at ten o'clock, A.M. it indicated 12°, and during the day was very low. A *Maréchal Niel* Rose against the mansion very severely injured, also a white *Banksian* Rose, both on a south aspect wall. The heavy fall of snow protected Savoy, Cabbages, &c.; but Broccolis have suffered much.—J. GADD, *Belhus, Purfleet*.

— A DWARF TROPEOLUM.—Seeing that Mr. Molyneux has so readily responded to "*West Riding, Yorks*," I shall be exceedingly glad if he will be good enough, through the *Journal of Horticulture*, to favour me with the name of the above. I had the privilege last year of inspecting the well-kept gardens at Swanmore Park, and there saw this dwarf *Tropæolum* growing for the first time. It seems as though I have not lost sight of it yet; the habit was so dwarf, foliage dark, and flowers such a bright scarlet. Excepting the colour it seemed to remind me of tufts of *Lobelia*.—WM. SPENCER, *Southport*.

— FRUIT CULTURE.—On Thursday evening, the 4th inst., Mr. W. Roupell, F.R.H.S., addressed the members of the Streatham Hill and Tulse Hill Institution upon this subject. The lecture, which was of a comprehensive character, was illustrated with some fine specimens of the best varieties of Apples, some of which had been previously exhibited at the Fruiterers' Show in the Guildhall. Reference was made to the useful work that was being done by the British Fruit Growers' Association; and some samples of preserved fruit from Lord Sudeley's fruit farms in Gloucestershire were shown and commended.

— THE WEATHER LAST MONTH.—November was dull and wet, and remarkable for the heavy fall of snow on the 25th (night) and two following days. It was 12 inches deep from 11 P.M. on the 27th until noon on the 28th. Rain and snow were recorded on all the days during the month except the 6th. The greatest daily fall was 0.71 inch on the 23rd, and the total for the month 3.90 inches. The barometer was very changeable. Highest reading, 30.45 at 9 A.M. on the 20th, lowest 28.90 at 7 A.M. on the 7th; average height for the month, 29.82. Highest shade temperature, 59° on the 23rd, lowest 11° on the 30th; lowest on grass, 14° on the 30th. Mean temperature of the month, 41.41°. The wind was in a westerly direction on twenty-four days. We had only eight bright days. The garden spring ran 9 gallons per minute on the 30th.—W. H. DIVERS, *Ketton Hall Gardens, Stamford*.

— LETTUCES.—I by no means intended to say anything against the veracity of Mr. Easty. My only difficulty was as to the variety of Lettuce he referred to in his note. I must explain that for some seasons Messrs. Vilmorin have favoured me with a copy of their retail catalogue (in French), and in that there is nothing which I could conceive as likely to be *Blond Blockhead* save the *Laitue Blonde Géante*, the description coming very near to that given. There is a *Grosse Brune Têtue*, which no doubt is the *Brown Blockhead*. Save the name! I shall hope to try both of these next year, and thank your correspondent for the seeds so kindly forwarded.—B. [Our friends across the channel have somewhat different ideas of nomenclature from those which we possess, and their names must not be taken too literally. For instance, "*Grosse blonde paresseuse*" does not exactly mean "large white lazy" Lettuce, as it might be literally translated, and similarly "*Grosse brune têtue*" can hardly be read as "large brown Blockhead." "*Têtue*" is probably in allusion to the firmness of the head, and possibly Messrs. Vilmorin in looking up their English dictionary, and finding the word given as meaning "headstrong," "obstinate," or "stubborn," confused the meanings, and considered a firm or solid head might be expressed by "blockhead." This seems the most likely explanation of the selection of so ridiculous a name.—ED.]

— GRAPE GROWING AND GRAPE KEEPING.—I must admit (see page 446) that Mr. Scott has in a novel and unmistakeable way disposed of one of my objections to the use of his compound for the destruction

of insects on Vines by his dispensing with the use of the syringe. But with all due respect to Mr. Scott's experience respecting the exterminating properties of his compound I have failed to discover them; but whether the cause, as Mr. Scott suggests, has been from improperly mixing or unskilful application, is a matter of little interest or importance, as I find preventives much preferable to cures. But should Mr. Scott continue to abolish the use of the syringe, which is equally as mysterious to me as my vigorous use of it appears to him, the use of insecticides of some kind will, no doubt, be as indispensable in the future as in the past, and since Mr. Scott is perfectly satisfied with past results, any further intrusion from me would I fear appear unseemly.—RICHARD WESTCOTT.

— SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP, NOTTS, FOR NOVEMBER, 56 feet above mean sea level. Mean temperature of month, 41.0°. Maximum on the 20th, 58.6°; minimum on the 30th, 14.7°. Maximum in the sun on the 1st, 95.2°; minimum on the grass on the 30th, 8.2°. Mean temperature of the air, 40.1°. Nights below 32°, in shade twelve, on grass twenty-one. Total duration of sunshine, fifty-one hours, or 20 per cent. of possible duration. We had eight sunless days. Total rainfall, 3.23 inches. Rain fell on twenty-one days. Average velocity of wind, 9.9 miles per hour. Velocity exceeded 400 miles on five days, and fell short of 100 miles on five days. Approximate averages for November:—Mean temperature, 41.7°. Sunshine, fifty hours. Rainfall, 2.04 inches. Rather a wet month, and mild up to the last week, when we had an unusually heavy fall of snow (11 inches deep), and a few days of very cold weather, the frost on the 30th being sharper than has been recorded here in any November in any of the last fifteen years.—JOSEPH MALLENDER.

— BIRMINGHAM GARDENERS' ASSOCIATION.—Occasionally an evening is set apart for the exhibition of plants, flowers, and fruit or vegetables of interest, especially new and rare objects, and at the last meeting, Mr. Hughes, the Secretary, read a paper on the Federation of Gardeners' Associations, and several interesting exhibits were sent. Messrs. Cutbush & Son, Highgate Nurseries, London, sent some plants in berry of some of the newer forms of *Pernettyas*, showing what striking and pretty decorative plants they are. Mr. R. Owen, Maidenhead, sent cut blooms of several new American *Chrysanthemums* and seedlings, amongst them *Ada Spaulding*, *Mrs. S. Coleman*, and *Madame Edouard Veltón*, all fine incurved varieties. In Japanese varieties *Advance* is truly an advance, and of a new and beautiful colour, and others are very promising. Mr. Cryer, the gardener at Berrow Court, Birmingham, contributed several plants of well grown *Cyclamens*, and Mr. Burberry, the Orchid grower at Highbury, sent cut flowers of some very fine varieties of *Cypripedium insigne*, also good specimens of *Odontoglossum Pescatorei* and *Sophronis grandiflora*.

— ABOUT sixty members and friends of the KENT COUNTY CHRYSANTHEMUM SOCIETY sat down to dinner at the Bridge House Hotel on Wednesday, 3rd December. The President, J. W. Prior, Esq., occupied the chair, and Messrs. Stevens and Davis the vice chairs. Both the room and the tables were tastefully decorated for the occasion by Messrs. Laing & Sons and Mr. Chard. The toast "The President and Vice-Presidents" was given by Mr. Stevens, and most suitably responded to by the President. Mr. D. B. Crane, in a neat little speech, gave "The Executive," to which Mr. Needs, Hon. Secretary, replied, stating the progress the Society had made in its three seasons. The first year they had only 900 cut blooms, the second year 1800, and this, the third, upwards of 2000; they took nearly £90 in gate money, and hoped to have a balance of nearly £40 to carry forward for next season. "Kindred Societies" was next given by Mr. Needs, and E. C. Jukes, Esq., Vice-Chairman of the National, spoke with his accustomed freeness, urging such a good society to become affiliated with the National. Mr. Birdseye gave "The Exhibitors," and the Chairman then presented the 15-guinea cup to Mr. Blackburne. Mr. J. A. Laing and Mr. Chard also suitably replied. Other toasts followed with excellent songs and recitations by Messrs. O'Neil, Monk, Searle, Crane, Birdseye and others. A hearty vote of thanks was also given to Mr. Norman Davis as donor of a silver cup and for the great interest and attention he has devoted to the Society from its commencement.

— SHREWSBURY CHRYSANTHEMUM SHOW.—We are pleased to see this wealthy Society has once more held a fruit and Chrysanthemum Show, none of this kind having been held there for several years. It was a fine display of cut blooms, fairly good prizes being offered in the open classes for twenty-four distinct Japanese. The prizetakers were Colonel Wingfield, Onslow (gardener, Mr. Lambert), first; second, France Hay-

hurst, Esq. (gardener, Mr. Bremmell); third, Mrs. Foster, Moor Park, Ludlow (gardener, Mr. Haggart); extra, the Duke of Sutherland, Trentham (gardener, Mr. Blair). For twenty-four incurved blooms—First, Colonel Wingfield; second, Mr. Greatrix, Mytton Hall (gardener, Mr. Townsend); third, Mrs. Foster. In the classes for twelve incurved and twelve Japanese the same exhibitors were also successful. The amateurs showed very well in all classes provided for them. Certificates of merit were awarded to Messrs. Jones & Sons, Pritchard & Sons, Mr. Eckford, and Mr. Myers; Mr. Murrell of Shrewsbury, Messrs. Smith of Worcester, and Mr. Harrison of Millington's Hospital. Fruit was not first class this season, but fair collections were shown from Attingham, Lord Berwick's (Mr. Pearson); from Acton Regnald, Sir Vincent Corbet, Bart. (Mr. Hawkesford); from Berwick, J. Watson, Esq., M.P. (Mr. Gant); and Colonel Wingfield of Onslow. Specimen plants were but poorly represented, growers in the county not knowing of the Show in time. The Show was well attended by the public, and we hope to see it continued another year.—G. W.

EXHIBITION SCHEDULES.

IN the course of your remarks in the Journal of the 4th inst. on the question of disqualifying exhibitors of groups after the public have been admitted in cases where an exhibitor has, to adopt your own mild term, "peculiarities" in his group, you suggest a proviso that "if anything in contravention of the stipulations is discovered before the close of the Show the prizes will be withheld. Now, in the rules of a certain well-known Society I find the following:—"Any person exhibiting flowers or plants belonging to another and entering them as his or her own, or exercising any artifice to deceive the Judges, or otherwise attempting to gain prizes by unfair means, shall forfeit all claims to such prizes as may have been awarded to him or her, and the Committee reserve to themselves the power to refuse future entries from such exhibitor." This seems to meet the point you raise exactly, and you will observe that it says "shall" forfeit, not "may" forfeit, so that even the Committee cannot condone a wilfully wrong act.

It would certainly be absurd to suppose that Judges are to dive into groups to discover they know not what, something on the principle of "turn round three times, catch whom you can." Not only would exhibitors object, but also the public, who would not care to pay for admission to see the wrecks after the storm.

On one point in your article I must disagree with you. You say such a proviso as you suggest should only apply to groups, but what about flowers neatly "grafted" on to specimen plants, or nice compact centres cleverly placed in large loose blooms? Would a Judge undertake the responsibility of discovering these "peculiarities?" I trow not. The symptoms of a wasting decline would probably not be apparent until the second day, and the adjudicator would certainly not be able when judging to discover with that pencil point of his whether every bloom was without guile.

Many a Society has been brought to the dust by allowing laxity in the observance of their rules, especially as regards honesty in exhibiting, for if Committees are not strict on this point it is unjust to those exhibitors who do show fairly, who thereupon get disgusted and cease showing at all.—ALTER EGO.

[There is a good deal of force in the remarks of our correspondent, and we do not in the least object to his slight disagreement with one of our propositions. Notwithstanding the stringency of general rules it is quite customary to insert special conditions or provisos to certain clauses, if only for guarding against the possibility of the stipulations in the rules being overlooked, and we think the practice good. In respect to judging blooms we think in the first place a sufficient number of Judges should be provided, and sufficient time allowed them for a critical examination of the whole of the exhibits, and then they should be expected to discover faults of whatever kind, and if they overlook any of a flagrant nature these Judges should be superseded another year. We think the practices suggested by our correspondent are about obsolete, and, at least in the case of cut blooms, are discoverable at the time the awards are made. We are convinced that in nine cases out of ten when mistakes are made they are the result of Judges having to "rush through" several classes in order that the work can be completed by the appointed time for the public admittance. If, as is usual, a stipulated time is announced for the entering of protests in the classes in question sufficient provision is made to practically ensure justice being done without relieving Judges of the responsibility that we are of opinion should rightly attach to them. Our remarks applied to exhibitions generally, and were not confined, except where stated, to any particular show.]

GARDENERS' ORPHAN FUND.

A SPECIAL general meeting was held on Tuesday evening last, at the Cannon Street Hotel, London, for the purpose of making some slight yet important alterations in the rules. William Marshall, Esq., Chairman of the Executive Committee, was called on to preside. The agenda paper, he said, contained four resolutions, three of which he should ask Messrs. B. Wynne, J. Wright, and R. Dean to propose, one being reserved for himself.

The resolution moved by Mr. Wynne, and seconded by Mr. J. Wills,

was as follows:—"That in the opinion of this meeting it is desirable, in the best interests of the Gardeners' Orphan Fund, that the date of commencement of the financial year should be altered from July 1st to January 1st, and that the annual general meeting should be held in February instead of July."

Mr. Wynne explained that this was simply a reversion to first principles, a return to the original proposition of the Committee, but at an important general meeting was departed from on the motion of the late Mr. Shirley Hibberd, for reasons which appeared forcible at the time; and although the Committee was doubtful about the wisdom of the change, did not feel justified in causing the least dissension, therefore acquiesced. It caused much confusion and involved a large amount of secretarial work, which on the score of economy and good management it was desirable to avoid.

Mr. Wright next moved and Mr. Roupell seconded, "That in order to carry the previous resolution into effect the following alteration in the rules be and are hereby made:—1, In Rule 3, last line, substitute "31st of December" for "30th of June." 2, In Rule 9, fourth line, substitute "December" for "June." 3, In Rule 10, second line, substitute "February" for "July."

Mr. Wright said that as all knew there was truth in the axiom, "Great results from little causes spring," therefore he hoped and believed that great and good results would follow the small alteration of the four words indicated, in the rules. This was necessary for setting the machinery in motion, that would work more smoothly by the change; and the time was opportune for making this change, since all the unsuccessful candidates at the last election were now placed upon the Fund, which now supports thirty-seven children, at an annual outlay of £481.

Mr. R. Dean then moved, and Mr. Walker seconded, "That the sum of £554 13s., the amount required to enable the Committee to grant the benefits of the Fund to the seven unsuccessful candidates at the last election, as a memorial to the late Mr. George Deal, having been collected and received by the Treasurer, this Meeting endorses the action of the Executive Committee in placing on the Fund Alfred Henry Budd, Winifred Jones, Sidney Alfred Offer, Arthur Henry Rowland, Mary Grieve, Evan Evans Kinch, Francis Thomas Pragnell, as and from the 1st of January next."

Mr. Dean remarked that in no other way could the memory of their late Chairman be so appropriately perpetuated as in the form suggested. The tribute was a substantial one, and provides means of livelihood to seven children, and he was sure that a dissentient voice would not be heard against the resolution which he had pleasure in moving.

The Chairman next moved, and Mr. Assbee seconded, "That the hearty thanks of this meeting be accorded to the subscribers to the 'George Deal Memorial Fund,' and especially to Mr. N. N. Sherwood and Mr. H. J. Veitch, through whose generosity a worthy memorial of the late Chairman of the Committee has been raised, and applied in a manner that he, in life, would have most approved of."

It was quite unnecessary, he said, for him to say anything in favour of what he now placed before the meeting with great pleasure, and the undoubted approval of all present.

All the resolutions were passed unanimously, and the meeting closed with a vote of thanks to the Chairman, proposed by Mr. A. F. Barron.

TREE AND SHRUB GROUPS.

GOOD work, correct practice, leading to successful combinations, and results entirely satisfactory, depends very much upon the study of faults and the full recognition of their cause. A faultless clump is a pleasant sight throughout the year. In the full glory of summer foliage it is of course at its best, but it has also special attractions at other seasons; of spring greenery, of autumnal leaf tints, of form in winter, when each tree invites inspection and comparison with the others. Nor is the clump devoid of colour then, for the rich greenery and warmth of evergreens is there, and there is also much beauty in the varied subdued tones of the bark of deciduous growth.

To obtain all this the trees must be well chosen and well placed, sufficiently far apart for full development; that is why the planting of permanent trees first and the temporary trees afterwards is advised. In the hands of an expert the position of each tree would be first of all marked upon a plan, and then the planting of the whole of the trees may be done together with certainty and despatch. In the hands of a tyro the work often becomes very costly from the wasteful use of valuable trees. An instance of this well known to me may be mentioned, where some miles of belts and many clumps have been planted so thickly with choice deciduous and evergreen trees in an uniform manner throughout, that thousands of valuable young trees will have to be sacrificed eventually, simply because there was no well considered plan at the outset. The planting was done by the owner of the estate, who was fond of and who knew trees fairly well, but who was quite ignorant of tasteful arrangement, and therefore had plenty of the choicest trees planted everywhere. With subsequent attention to thinning the result may prove tolerably satisfactory, but it would have been much more so, and far less costly, had the work been

placed in the hands of a competent planter. The outlay for trees would have been infinitely less, the nurses or temporary trees would have been Larch, growing into money by the time thinning became necessary, instead of more costly trees good for nothing at the thinning but faggot wood.

Small clumps may often be seen where only a single tree was required, and the effect of the foliage is very similar to that of one

appearance in the earlier stages of growth, and with age the Cedar will assume the typical form, becoming more round headed and more effective, for the appearance of a large specimen of the silvery *Atlantica* is very striking, affording a fine contrast to the Purple Beech. To this eventually will be conjoined the ruddy hue of the bark of the Scotch Fir, and its picturesque effect as the tapering form departs with its lower branches. Near it the Silver Birch



FIG. 69.—1. WHITE BIRCH; 2. LIME (*TILIA MISSISSIPPIENSIS*); 3. SCOTCH FIR; 4. PURPLE BEECH; 5. *CEDRUS ATLANTICA GLAUCA*; 6. *ACACIA DECAISNEANA*; X X. COMMON ASH.

tree if the trees are all of the same kind; but however well such clumps are placed they never please the eye like a fine specimen, as at best they are just a formal mass of foliage, all sense of dignity and grace being lost in the absurdity of an effect of a many-legged tree.

Fig. 69 represents a small group, one of several in course of being planted in a park. The two Ash trees were in a hedgerow which has been cut down and grubbed, the trees being retained to form part of the group as shown. Without giving actual portraits of the trees the outlines are sufficiently characteristic of their

will be in fine contrast, and with the Lime and Acacia will combine to form an attractive and telling group. Farther up the line of the old hedgerow there are five Ash trees, also retained to form a bolder group with a Cedar of Lebanon, Turkey Oak, Scarlet Oak, two *Pinus austriaca*, Tulip Tree, common Lime, Horse Chestnut, Fern-leaved Beech, Purple-leaved Maple, Scotch Fir, and the Aucuba-leaved Ash. This will become a very fine group as the trees gain size, and it may be fairly given as an example for the clump for all seasons of the year, the characteristics of which are explained at the beginning of this paper. The turf sweeps gently

upwards from a lake between these two groups, onwards to a bold semicircle of timber in the distance, forming one of several vistas visible from a common centre.

Mixed groups are not to be planted exclusively. One vista commands a picturesque building on a hillside. Near the building there will be a group of Scotch Firs, and lower down the slopes of the hill a group of Elms; at other points groups of Oaks, and others of *Pinus austriaca*, will impart character and dignity in due course. The Elms and Oaks will be planted far enough apart to ensure full development and really fine timber. The Scotch Firs will be so arranged as eventually to form picturesque groups such as artists love rather than with a view to very fine specimens.—EDWARD LUCKHURST, *Warrens, Harold Wood, Romford*.

THE ORIGIN OF THE FLORIST'S CHRYS- ANTHEMUM.

[A paper by the late Mr. Shirley Hibberd, read at the Centenary Conference of the National Chrysanthemum Society, November 11th, 1890.]

THE origin of the flower that commands our homage at this season and is the subject of this Centenary festival is a matter of some importance both to botanists and horticulturists, and cannot be without interest to those who find amusement in speculating on the beginning of things, and the histories of the favourites of the garden. It may appear to the casual observer of what is now passing as a question easily disposed of, for do we not read in the books that the Chrysanthemum was introduced to this country 100 years ago, certainly; and has been known in Europe 200 years probably; and that China has the honour of having made it as a garden flower from one of the wildings of her own woods? Many questions may be disposed of in this easy way for those who are content with the dust that may be swept from the surface of a subject, but in this solemn assembly, making serious business of all that pertains to the history of the golden flower, there must be an endeavour made to brush away the superficial dust in order to explore what lies beneath.

There is, then, be it observed, a strong *primâ facie* case for a plural origin of the various groups of flowers that are brought into the purview by the generic term Chrysanthemum. The Chusan Daisy appears far removed from the noble Queen of England or the fantastic Spiderkry, the latest of the grotesque forms of the flower that Japan has given us. We have Liliputians, Pompons, reflexed, and incurved, Japanese of several distinctive characters, and single flowers that in some particulars of growth and proportion stand apart from the other groups. When I said the other day, in discoursing on the Dahlia, that it is the most variable of all known flowers, I had not forgotten the flower that is now before us, but I was less sensible than I ought to have been of the immense range of its variations both in form, and size, and colour. But when I look seriously at the matter I perceive many visible connecting links between the several groups, and these are to be traced only by a careful diagnosis, which shall distinguish between actual differences and mere modifications and variations. An elastic cord may be 1 foot long and 1 inch thick, and in that form of great strength, but when stretched a touch might snap it; yet it is the same cord, and if we are careful not to break it will return to its original proportions and qualities, and so prove its identity. I would submit the Chrysanthemum to some such test, but the moment I contemplate doing so a difficulty arises that appears insuperable. We may stretch the flower as we stretched the cord, and in fact we have stretched it in every way imaginable, but we cannot restore it to its pristine form. We know something of analysis in this business, but nothing of synthesis; we have no record of any floral favourite that has been much modified by man being actually bred back to its original form of a wild flower. I remember at the first Primula Conference Mr. Lynch of the Cambridge Botanic Gardens undertook to breed back the Auricula to the wild form out of which it originated, and all that can be said further on the subject is that the promise made years ago remains unfulfilled, and I will venture to say will so remain for ever and ever. The experimental test must be useful in this inquiry, but it cannot be final. There remains for us only the inductive method, and in aid of that we have a body of facts of the highest interest and value.

It will be proper to begin with a few elementary particulars for the advantage of friends here who have not given any special attention to the structure of the flower and the general character of the plant. The Chrysanthemum is a compound or composite flower, and may be roughly described as a cluster of distinct flowers fused together, and fixed on one centre or receptacle. We find in a typical flower of any of the higher classes of indigenous plants a calyx of green leaves, a corolla of coloured petals, male organs or stamens crowned with anthers that diffuse a fertilising pollen, and

female organs or pistils crowned with sensitive stigmas that receive the pollen, and by the stimulus thus communicated to the ovary at the bases of the styles or stems of the pistils, the growth of fertile seed is promoted, and the proper work of the flower is thus completed. If you take a flower of a wild Rose you will easily discover all these parts, and they combine to represent what I will call unity, for the one flower is one flower, and all its parts relate to one centre, and the use of every part is in some way to contribute to the production of the scarlet hiep or berry in which the seeds are formed. In the flower of a single Chrysanthemum the corresponding organs are all to be found, but modified in form and arrangement. The characters that first strike us are the corolla, as we may call it, that forms the boundary, and the stamens and pistils that form the golden disk. When we remove one of the supposed petals we find it to be tubular at the base, and enclosing an imperfect pistil, which is often a mere thread without stigmas. Now we know that this is not a petal, but a kind of imperfect flower, and we call it a ligulate or strap-shaped floret. Analysing the disk by cutting the flower through vertically, we find on the receptacle a closely arranged set of tubes or narrow cups that terminate above in teeth and below in corresponding ovaries. In each of these tubes are stamens in a bundle, and through the bundle or fascies rises the pistil crowned with two horns that are veritable stigmas. Now we learn the meaning of the arrangement. Each tube is a complete flower, the tube itself being the corolla, and the stamens and pistils within rendering it properly hermaphrodite and capable of seed production, which the strap-shaped organs of the margin are not, for the pistils there are mere signs, and apparently accomplish nothing. We term the strap-shaped outer adornments florets of the ray, and the tubular flowers within florets of the disk. The golden colour of the disk is the result in the first instance of the pollen produced by the syngenesious or coherent anthers, which perfect and disperse the pollen some days in advance of the protrusion of the stigmas, and when these are ready to receive pollen advantageously the pollen of the florets to which they belong is all dispersed and gone, and consequently we may regard it as a rule of life with the Chrysanthemum that although the stigmas may receive pollen from florets of the same disk, they cannot receive it from the same floret, and will be very likely, indeed, to receive it from the stamens of another flower. The word "flower" I use for convenience solely; the proper term is capitulum, because a so-called flower consists, as already explained, of many florets united in one head.

When we reflect on the number of wild flowers that are fertilised by pollen from other flowers on other plants of their own kind, and that many of them are proterandrous or produce their pollen in advance of their stigmas, it seems a marvel that they should remain constant to a certain typical form, as many appear to do for centuries, although exposed to the chances of cross fertilisation. Variations do indeed occur, as every botanist knows full well, and yet the constancy of what we call species presents a problem of tremendous import for the philosopher. Many plants associate in groups which flower simultaneously and so favour a settled heredity, and thus the circumstances of place and time contribute to the constancy I am hypothesising. And another cause contributes to it, for varieties have a more slender tenure of existence than settled types, and we speak of the survival of the fittest to express our faith in the practice by Nature of a process of selection, death being the agency for the removal of variations that are not wanted. Thus creation and continuance are both kept in check, and types survive variations, except in some peculiar cases, in which they become established to behave themselves as species.

But when man steps in the case is altered. Anything that differs from the accustomed type will suit his taste even if it be useless and ugly. A peloric Snapdragon, or a wheat-ear Carnation, or a green Rose, or a Chrysanthemum in which the florets of the ray have usurped the place of florets of the disk, and so produces what we call a "double" flower, will afford great delight. His first business will be to keep this new creation, whereas, perhaps if he had left it alone, death would have swallowed it as a thing unfit. This keeping of the curiosities is the beginning of floriculture. A variation fires a new enthusiasm; the variety is cherished, and though unable to propagate itself by reason of its barrenness, the florist finds means to multiply it, and he takes the hint it offers and labours to obtain other variations, and so by degrees becomes the master of Nature within certain limits which, indeed, are very narrow, and as compared with the great scheme of Nature the work of the florist is but trifling. But as an amusement, floriculture must have the highest place amongst what may be termed elegant pursuits, for its aim is the creation and preservation of floral beauty, and its work will be of incalculable value to the philosopher if he will but remove the scales of prejudice from his eyes and see what he can learn from it. We talk of heredity, and the causes and consequences of variation, and sometimes imagine the botanists know all about it. The truth is, they know very little about it;

the key to such knowledge is in the florist's hands as regards the subjects of his attention, for he possesses records of their variations, and their life histories are to him familiar, and the habit of observation is not only forced upon him as essential to his success, but it grows by what it feeds upon, and every day reveals to him something that is concealed from the botanist, unless he happens to be also a florist, which he seldom is, and perhaps never can be.

Now let us look into this subject of variation. The ligulate florets are, as regards actual and direct contribution to the formation of seed, useless. But Nature is frugal, and all things have or have had uses to justify their being. That the ray florets were once upon a time fertile female flowers is probable, but if it be asked of what use are they now it may be answered that they doubtless serve to attract insects to the flowers that the pollen may be usefully removed and scattered. Now what do we see as the result of the multiplication of these ray florets at the expense of the disc florets? We see nothing else but this, that the doubling of the flower renders it infertile, and from the moment it acquires this new character it is actually dependent on man for its continuance. When man ceases to preserve the double Chrysanthemums they will absolutely perish, unless, indeed, neglect should quickly replace the inner ligulate florets with tubular florets, in which case they would save themselves by returning to a single form, and even that would be equivalent to destruction, for it is the continuance of the double flower we are considering. If you pull to pieces a double flower of any kind, whether incurved or reflexed, Pompon or Jap, if it has no yellow disk, it will be found destitute of pollen and absolutely incapable of seed production. One reason, therefore, that the raising of seedling Chrysanthemums is a matter of difficulty is that the flowers have become sterile, and therefore to obtain seed from them is impossible. I am well aware, of course, that seed is obtained not only by accident, but by method, and there is what may be called a science of seed production in this field of floriculture. But I am striving to get at the beginning of things, and must be allowed to set forth both generalities, and I repeat that the tendency of all improvement of the Chrysanthemum is to render the flower incapable of reproduction, and therefore its entire care as a garden flower is in the hands of man.

(To be continued.)



THE NATIONAL ROSE SOCIETY.

THE annual general meeting of the above Society was held in the Horticultural Club room on Monday, December 9th, at 3 P.M., Dr. Robert Hogg in the chair. There was a good attendance of members, amongst those present being the following:—The Revs F. R. Burnside, A. Foster-Melliar, F. H. Gall, J. H. Pemberton, W. Wilks, H. B. Biron, and H. H. D'Ombraïn (Hon. Sec.), with Messrs. H. J. Pearson, H. Appleby, J. Bateman, R. Bloxham, B. R. Cant, F. Cant, C. E. Cant, W. J. Jefferies, E. B. Lindsell, G. Paul, J. D. Pawle, A. Prince, G. Prince, H. Wallis, W. H. Williams, O. G. Orpen, W. F. Cooling, J. Burrell, R. E. West, G. Mount, F. T. Strange, S. G. Rumsey, W. Rumsey, A. Slaughter and E. Mawley (Hon. Sec.).

The proceedings were commenced by Mr. Mawley reading the notice calling the meeting. The minutes of last annual general meeting were then taken as read, and Messrs. Jefferies and Bateman were appointed scrutineers of the ballot. Following this Mr. Mawley read the appended report, and Mr. J. D. Pawle the financial statement.

REPORT OF THE COMMITTEE FOR THE YEAR 1890.

DURING the past year the Society has been enabled, thanks in a great measure to the liberal donations of some of its members, to inaugurate a special exhibition of Tea Roses. This, the first show of the kind, was held at Westminster early in the season, in conjunction with the Royal Horticultural Society, and was generally acknowledged to be the finest display of this refined and popular class of Roses ever seen in London. At the Metropolitan Exhibition, which was again held at the Crystal Palace, Roses were more numerous than in any year since 1885. There were fewer exceptionally fine blooms than on some previous occasions, but the average size and quality of the flowers staged was remarkably good. In one respect this Show stands out as unique, in that nearly the whole of the blooms retained their freshness throughout the entire day. At this exhibition the Society's new challenge trophy for Tea and Noisette Roses was for the first time competed for. The Birmingham Show also proved a great success, being the largest and finest the Society has yet held in the provinces. In many of the classes the competition was singularly keen.

The first Supplement to the Catalogue of Exhibition and Garden Roses being out of print, an entirely new edition was prepared and

issued to members early in the summer. This supplement contains select lists and descriptions of those varieties which have been introduced since the original Catalogue appeared in 1884. Copies of the Royal Horticultural Society's Report on the National Rose Conference held at Chiswick in 1889 were also distributed.

The Committee wish again to direct the attention of their affiliated, and also of other Rose societies, to the question of Rose show fixtures. In some few cases during the past season the clashing of dates may possibly have been unavoidable, but in others it might, no doubt, have easily been prevented. If only all the Rose societies in the same neighbourhood would communicate with each other early in the year and come to some mutual arrangement, much of the present suicidal clashing of fixtures would, in the opinion of the Committee, entirely disappear. They would also point out that there is generally such a run on certain particular days, that some of the best dates are often altogether overlooked.

There are at the present time 497 members on the Society's books, while the number of affiliated societies is now thirty-one. Both these numbers are higher than in any previous year.

During the last year the Society has experienced several severe losses amongst its members, two of its Vice-Presidents—Mr. James McIntosh, who has from its very beginning been its most liberal supporter, and Mr. Shirley Hibberd, who, by his pen and active co-operation has done much to further its interest; while in the Countess of Rosebery the Society loses one of its recently appointed Vice-Patronesses.

FINANCIAL STATEMENT.

Considering the extra expenses incurred in holding a third Show, in printing the new supplement to the Catalogue, and in supplying members with reports of the Rose Conference, the financial position of the Society must be regarded as very satisfactory. The total expenditure was £692 15s. 7d., while the receipts, including the balance from last year, amounted to £738 0s. 3d., thus leaving £45 4s. 8d. to be carried forward to 1891.

ARRANGEMENTS FOR 1891.

The Committee have entered into the following arrangements for the coming year, which they trust will meet with the approval of the members generally. An early Show of Tea Roses will be again held at Westminster in conjunction with the Royal Horticultural Society on Tuesday, June 23rd, the Metropolitan Exhibition at the Crystal Palace on Saturday, July 4th, and the Provincial Show at Hereford on Thursday, July 16th. Although the idea of establishing a National Rose Society originated at Hereford fifteen years ago, this will be the first time that the Society has ever held a Show there.

MEMBERS' PRIVILEGES.

Subscribers of £1 will, as usual, be entitled to two private view tickets to the Society's Exhibitions at the Crystal Palace and Hereford, and four transferable tickets admitting at the same time as the general public; while subscribers of 10s. are entitled to one private view and two transferable tickets. Each member will also be entitled to a ticket of admission to the early Exhibition of Tea Roses. New members will receive a copy of the Society's illustrated catalogue of exhibition and garden Roses, together with one of the new supplement. Members alone are allowed to compete at the Society's Exhibitions.

In conclusion the Committee desire to express their best thanks to their local secretaries, also to all those who, by gifts of special prizes or in other ways, have contributed to maintain the Society in its present satisfactory position.

BALANCE SHEET, YEAR ENDING 30TH NOVEMBER, 1890.

RECEIPTS.										£	s.	d.
Balance at Bankers, December 1st, 1889	..	..	..	..	..	..	..	..	..	84	5	3
Subscriptions	..	..	..	..	..	..	..	..	..	344	16	0
Donations	..	..	..	..	..	..	..	..	..	5	0	0
Affiliation Fees, and for Medals from Affiliated Societies	..	..	..	..	..	..	..	..	..	78	8	0
From Crystal Palace Company	..	..	..	..	..	..	..	..	..	105	0	0
From Birmingham Horticultural Society	..	..	..	..	..	..	..	..	..	80	0	0
Special Prizes	..	..	..	..	..	..	..	..	..	40	11	0
										£738	0	3

To Balance, December 1st, 1891 £33 8s.
THOMAS BURT HAYWOOD, *Hon. Treasurer.*

EXPENDITURE.

										£	s.	d.
Printing, Stationery, and Advertising	..	..	..	..	..	..	..	..	..	48	9	0
Postage, Telegrams, and Sundry Expenses	..	..	..	..	..	..	..	..	..	28	9	1
Secretary's Travelling Expenses to Arrange Shows	..	..	..	..	..	..	..	..	..	6	12	6
Expenses Drill Hall Show	..	..	..	..	..	..	..	..	..	2	5	0
Crystal Palace Show	..	..	..	..	..	..	..	..	..	8	6	6
Birmingham Show	..	..	..	..	..	..	..	..	..	7	16	6
R.H.S. Rose Conference Reports	..	..	..	..	..	..	..	..	..	22	10	0
Medals	..	..	..	..	..	..	..	..	..	15	3	6
for Affiliated Societies	..	..	..	..	..	..	..	..	..	63	3	6
Prizes Drill Hall Show	..	..	..	..	..	..	..	..	..	38	10	0
Crystal Palace Show	..	..	..	..	..	..	..	..	..	283	5	0
Birmingham Show	..	..	..	..	..	..	..	..	..	148	5	0
Assistant-Secretary and Accountant	..	..	..	..	..	..	..	..	..	20	0	0
Balance at Bankers	..	..	..	..	..	..	..	..	..	45	4	8
										£758	0	3

Audited with Vouchers and found correct—
J. D. PAWLE
F. T. WOLLASTON } *Hon. Auditors.*

The adoption of the report and financial statement was moved by Dr. Hogg, who observed that he had every reason to be satisfied with the condition and progress of the Society. The Rev. A. Foster Melliar seconded the resolution, which was carried unanimously. Other resolutions followed, expressing the thanks of the Society to the Horticultural

Club for the use of their room during the year; also to the officers and other members of the Committee for their services in 1890. It was also resolved, on the motion of the Rev. J. Pemberton, seconded by Mr. B. R. Cant, "That the first part of bye-law 7 be altered so as to read, 'The General Committee meet twice annually—in January to elect the Executive Committee, and consider the schedules for the year; and in November to make arrangements for the general meeting of the Society.'"

A more important matter was next reached in the agenda when Mr. E. B. Lindsell rose to propose "That the following Roses be added to regulation 6:—Alfred Colomb, Marshal P. Wilder, Wilhelm Koelle, Duc de Rohan, Mrs. Jowitt, Grand Mogul, Jean Soupert, Lady M. Fitzwilliam, Lady Alice, Madame A. Lavallée, Marie Baumann, together with the following note:—N.B.—In bracketing Roses together foliage and habit of growth are not taken into consideration." The Rev. H. B. Biron seconded the motion, but in a rather doubtful tone, and some discussion followed. Several members raised objections to Alfred Colomb being identified with Marshal P. Wilder or Wilhelm Koelle. Others considered that though a difference was sometimes seen, the distinction was too slight or not sufficiently constant to permit their being staged together, and this seemed to be the general feeling; at least when the motion was put from the chair it was carried by a large majority.

Another matter of considerable importance, and which occasioned more discussion than any other part of the business, was the following, proposed by Mr. G. Paul:—"That having regard to the inutility of the addition made last year to Regulation 8 against dressing Roses, the words, 'Dressing Roses so as to alter their character is prohibited,' be omitted, and the Regulation stand as prior to its alteration." Mr. Paul remarked that it would seem somewhat strange for him to be the first to propose the alteration of a rule he had been instrumental in forming last year, but he was convinced from personal experience and general report that it had been inoperative. Both judges and exhibitors had practically ignored the rule, and it placed conscientious exhibitors at a greater disadvantage than before, as they were deterred from manipulating their flowers in any way, while others of a less sensitive disposition paid no regard to the matter. He entirely disapproved of dressing Roses in any form, but he felt it was useless to make a law that only led to law breaking. The Rev. Foster-Melliar expressed surprise at Mr. Paul's motion, because he thought the rule had been beneficial, and that excessive dressing so to alter the character of the blooms had been to a large extent stopped. He thought the rule should remain as it was, an opinion in which Mr. Jefferies and others concurred. The Rev. D'Ombrian considered it desirable to try the rule for a long time before discarding it. Mr. Paul then said that there was an instruction to the Judges to the effect that an over-dressed bloom should be regarded as a bad bloom, and he asked if any judges present could say that they had acted upon this instruction. Several in reply to this stated that they had done so, and further expressed the opinion that there had been less excessive "dressing of bloom" during the past year than before. Mr. Paul said he was glad to hear this, and he hoped the discussion would be the means of leading to a more stringent enforcement of the regulation. He, however, adhered to his motion, which, being seconded and put to meeting, was negatived by a large majority.

It was then declared that as the result of the ballot the names in the appended list had been duly returned, and the meeting closed with a hearty vote of thanks to the Chairman.

COMMITTEE AND OFFICERS, 1891.—President: The Very Rev. The Dean of Rochester, D.D. Vice-Presidents: His Grace the Duke of Portland, Sir Joseph R. Bailey, Bart., M.P., Michael Biddulph, M.P., James Rankin, M.P., the Mayor of Hereford, R. N. G. Baker, Rev. J. M. Fuller, T. B. Haywood, Dr. Robert Hogg. Hon. Treasurer: Thomas Burt Haywood. Hon. Secretaries: Rev. H. Honeywood D'Ombrian, Edward Mawley. General Committee: H. Appleby, J. Bateman, Rev. H. A. Berners, R. Bloxham, G. Bunyard, Rev. F. R. Burnside, J. Burrell, B. R. Cant, F. Cant, Rev. A. Cheales, Captain Christy, W. F. Cooling, G. Dickson, Rev. A. Foster-Melliar, W. H. Fowler, Rev. F. H. Gall, T. W. Girdlestone, C. J. Grahame, W. J. Grant, R. Harkness, C. F. Hore, W. J. Jefferies, R. L. Knight, E. B. Lindsell, J. Boyes, Rev. F. Page-Roberts, G. Paul, J. D. Pawle, Rev. J. H. Pemberton, A. Prince, D. Prior, W. Rumsey, A. Slaughter, A. Turner, H. Wallis, R. E. West, E. Wilkins, Rev. W. Wilks, W. H. Williams, F. T. Wollaston. Hon. Auditors: J. D. Pawle and F. T. Wollaston. Dr. M. T. Masters was also elected a Vice-President.

LOCAL ROSE EXHIBITIONS.

I REALLY did not intend continuing further correspondence on this subject, but I feel bound to answer Mr. Raillem by referring once more to the statement I made at page 380, line twenty-one, also the statement made by "J. B." at page 420, line forty-four, and the schedule of the Gloucester Show, and others I could mention, but space does not permit. If these are not monopolies, I do not know what are. Mr. Raillem quotes the N.R.S. schedule with its divisions and restrictions, and suggests it cannot be improved. Take for instance division F, which I suppose is allotted for the smaller growers. Will he tell me whether there are any restrictions that would prevent Mr. Lindsell or Mr. Pemberton from showing in any of the classes in that division if they thought well? If so, I confess my search has been in vain.

With regard to the passage I quoted from the "Rosarians' Year Book," in my opinion it was quite in accordance with the Rev. H. T. Frere's

views. There is no doubt in my mind that his object was for encouraging the smaller growers. He says in that paragraph, at page 16, "We want more exhibitors; we old ones must beat up for recruits, and give advice and counsel." He also says, "We ring changes of the prize-list on too small a peal year after year, A, B, C, D, &c., never E or F" (this sentence refers to provincial shows), and which Mr. Raillem omits to mention. The interpretation I put upon that is that there ought to be additional classes, and for whom? Undoubtedly the small growers, as already there are sufficient for the larger ones. Again, Mr. Raillem quotes the passage, "Where great difficulty was experienced in persuading a neighbour to show at an exhibition, and upon his taking a first prize started him off," &c. Mr. Raillem attributes that to pluck. I do not see much pluck in a man who wants politely driving to do anything. No, it was the encouragement he received which enabled him to win the prize. Pluck is all very well, but something else is required with it—a head with something in it, also a pocket with something in it.

In conclusion, permit me, although not personally known to him in life, to pay my humble tribute of sorrow for the loss we must feel by the death of the Rev. H. T. Frere.—AN EXHIBITOR.

ROYAL HORTICULTURAL SOCIETY.

DECEMBER 9TH.

THE last meeting of the Committees for the present year was held in the Drill Hall, James Street, on Tuesday, when there was a good attendance of members at each of the three tables. Exhibits are never very numerous at this time of year, especially when the weather is unfavourable, but on the occasion under notice they were perhaps rather above the average of corresponding dates. Orchids in particular were well represented, some very valuable novelties being shown, and these furnished both interest and colour. The duties of the Floral Committee were much lighter than usual, two collections of Primulas and Zonal Pelargoniums composing the greater portion of the exhibits in this department. Fruit and vegetables included excellent market Grapes, fine Onions, and a quantity of preserved fruits.

FRUIT COMMITTEE.—Present: R. D. Blackmore, Esq., in the chair; and Messrs. John Lee, P. Crowley, Harrison Weir, C. Ross, J. Willard, J. Denning, W. Warren, J. T. Saltmarsh, A. H. Pearson, H. Balderson, G. Wythes, F. Q. Lane, T. F. Rivers, J. Cheal, and J. Wright.

Two bunches of a black Grape named Scarborough Seedling were sent by the Liverpool Horticultural Company. The variety is said to be a cross between the Black Hamburg and Gros Colman, but no award was made on the ground that it was considered to be too much like the last-named variety to be regarded as distinct, and on being compared with samples of Gros Colman in the room, as grown at Worthing for market, no difference was perceptible either in appearance or quality. Bunches of *Lady Hutt Grape* were sent by Mr. Miles, gardener to Lady Hutt, Appley Towers, the result of a cross between Gros Colman (seed parent) and Black Alicante. Berries round, white, about the size of the Black Hamburg, and extremely juicy and rich in quality. They were quite firm and the stalk green, indicating its keeping properties, and it will not improbably prove to be a first-rate white Christmas Grape. A first-class certificate was unanimously awarded.

Mr. Ross, Welford Park Gardens, sent two Pine Apples, Smooth Cayenne, weighing respectively 7 lbs. 4 ozs. and 6 lbs. 12 ozs., and a cultural commendation was promptly recorded. Mr. Ross also sent three seedling Apples, but as they were not equal to existing varieties no award was made. Varieties of Apples are already much too numerous, and a seedling has to afford evidence of distinct superiority to merit official recognition. However, a seedling of much promise was sent by Mr. J. T. Saltmarsh, and named Chelmsford Wonder. It was raised by a cottager in Essex, is said to keep till March, the tree being a good bearer. The fruits were almost as large and symmetrical as fine specimens of Peasgood's Nonsuch, firm, heavy, and agreeably sub-acid. The Committee were so favourably impressed with this Apple that a desire was expressed to see it again in February or March, and to test it then in a cooked state. Mr. T. Dixon, Grove Road, Leighton Buzzard, sent a dish of Cox's Orange Pippin from a tree trained against a wall and grown in sandy soil. They were richly coloured, but wanting in flavour (vote of thanks). Mr. Sidney Ford sent dishes of King of the Pippins Apple, and a vote of thanks was accorded.

Mr. James O'Brien, Harrow-on-the-Hill, sent fruits of Jamaica Oranges, heavy, with a thin pale rind, very juicy and good (vote of thanks). Mr. G. Wythes sent a gigantic specimen of the Spanish Cardoon, and a cultural commendation was awarded. He also sent plants of Victoria Spinach and Beet, and the varieties were recommended to be grown at Chiswick. Onions of enormous size were exhibited by Mr. Deverill, and a cultural commendation unanimously awarded. A bronze medal was recommended for twelve baskets of Grapes for market, sent by Mr. W. Hazell, Worthing, and vote of thanks awarded to Mr. Beach for a fine collection of bottled fruit and jams, a silver medal having been adjudged for Mr. Beach's produce on a recent occasion.

FLORAL COMMITTEE.—Present: W. Marshall, Esq., in the chair; and Messrs. E. Mawley, H. Turner, G. Paul, T. Baines, W. H. Williams, B. Wynne, H. Herbst, R. Dean, H. B. May, F. Ross, W. C. Leach, C. Jefferies, H. Cannell, C. Noble, and the Rev. H. H. D'Ombrian.

The most conspicuous of the exhibits before this Committee were:

the brilliant Zonal Pelargoniums from Messrs. H. Cannell & Sons' Swanley, and a better example of the value of these plants for winter flowering could not have been afforded. Several good varieties were represented by fine trusses or clusters of bright scarlet, crimson, and salmon flowers; but of two varieties stands were shown of a dozen or more trusses each. These were F. V. Neulans, scarlet, with a white centre; and Souvenir de Mirande, soft salmon, with a white centre, both single and very effective. A group of bright crimson and gold graceful *Celosia* "plumes" were also sent from Swanley. A silver Flora medal was awarded for the collection. A group of double Primulas came from Mr. H. B. May, Edmonton, very neat, compact, and well flowered (silver Banksian medal). Messrs. Pitcher & Manda, Hextable, sent a plant of Mrs. Alpheus Hardy, with small imperfect flowers, but why it was shown was not evident, as it was not calculated to enhance the general appreciation of the variety. Mr. A. Waterer, Knap Hill, contributed a group of Piceas for comparison with "*Picea pungens argentea*," for which a first-class certificate was awarded; and specimens of injured *Aucuba* and other leaves were shown by Philip Crawley, Esq., Waddon House, Croydon, where it was said the temperature had fallen on the 28th ult. to 1°, or 31° of frost, the thermometer being 4 feet from the ground. Messrs. G. Coppin & Sons, Addington, sent similar specimens; and a patent tree pruner, which was commended.

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq., in the chair; Dr. M. T. Masters, and Messrs. Sidney Courtauld, James Douglas, Lewis Castle, De B. Crawshay, H. M. Pollett, H. Ballantine, J. Dominy, E. Hill, F. Sander, and J. O'Brien.

So many good novelties were exhibited at this meeting that four first-class certificates and three awards of merit, besides a cultural commendation, were granted by the above Committee. But the light was so bad that none of the flowers could be seen to advantage or in their true character. G. N. Pepper, Esq., Milford Hill, Salisbury, sent a very large *Lælia anceps*, with about two dozen long spikes of fine brightly coloured flowers; as a decorative plant it was one of the most attractive shown. T. A. Gledstanes, Esq., Manor House, Gunnersbury (gardener, Mr. Denison), had a large plant of the peculiar *Cœlogyne barbata*, the sepals and petals white, the lip heavily fringed with brown.

Messrs. J. Veitch & Sons, Chelsea, exhibited a group of beautiful hybrid *Cypripediums*, amongst which were *C. Medea* from *C. hirsutissimum* and *C. Spicerianum*, clearly showing the characters of both parents in combination, the dorsal sepal partaking of the *C. Spicerianum* shape and colouring, the petals like *C. hirsutissimum*, but modified by the effect of the other species. *C. Niobe*, which was figured in this Journal page 527, Dec. 19th, 1889, is a charming hybrid between *C. Fairrianum* and *C. Spicerianum*, and on this occasion several seedling variations from the same cross, differing both in size and colour of the flowers, such as *C. Leeannum* or *C. Leeannum superbum* does. Another hybrid *Cypripedium* named H. Ballantine, from *C. Fairrianum* and *C. purpuratum*, the dorsal sepal rounded, broad, and heavily veined with crimson, the petals tipped with crimson.

A most interesting group of hybrid *Cypripediums* was exhibited by Messrs. F. Sander & Co., St. Albans, and the plants were tastefully arranged with small Ferns. Very handsome was *C. Pollettianum*, from *C. calophyllum* and *C. oenanthum superbum*. *C. Castleannum* was even more distinct, but less showy, from *C. hirsutissimum* and *C. superbiens*, the prevailing colour a soft bluish purple. *C. Maynardi* is a beautiful hybrid from *C. purpuratum* and *C. Spicerianum*, all of which are described fully in our Orchid column (page 513). It is evident that we may now look for many more hybrid Orchids from St. Albans, as the numberless seedlings raised are just reaching flowering size, and fresh novelties will be frequent. Besides those already named the following were shown at the meeting:—*Selenipedium Weidlichianum*.—A free flowering hybrid, from *C. Hartwegi* and *C. Schlumi*. The lip bright rose; the petals twisted, edged, and tipped with rose; the dorsal sepal lighter, and the lower sepals broad and white. The leaves are long, narrow, green, and flower stem tall, branching, with a number of flowers. *Cypripedium Alcides*.—A hybrid from *C. insigne* and *C. hirsutissimum*, with greenish sepals and purple tinted lip. *Cypripedium Orpheus*.—From *C. venustum* and *C. callosum*, the dorsal sepal veined with purple and green; the petals deflexed, purple at the tip; the lip dark polished purple. *C. insigne longisepalum* is a peculiar importation from Northern India, with light greenish flowers; the dorsal sepal very long.

CERTIFICATED PLANTS.

Cypripedium Pollettianum and *Maynardi* and *Cattleya O'Brieniana* (F. Sander & Co.).—All these have already been described.

Cymbidium Tracyanum (Mr. H. A. Tracy).—This is also described in our Orchid column.

Lælia Gouldiana (T. Statter, Esq., Stand Hall, Whitfield, near Manchester; gardener, Mr. R. Johnston).—An excellent plant was shown of this fine *Lælia* with bright rosy crimson flowers, very freely produced, the plant of capital habit.

Cypripedium Osborni (Mr. T. Osborn, Grove Gardens, Teddington).—This a hybrid from *C. Harrisianum superbum* and *C. Spicerianum*, remarkable for the great size of the flowers, the dorsal sepal being extremely broad, white, with a crimson central bar and a few streaks, polished petals, and a purplish crimson lip of considerable size.

Lælia Tresederiana (T. Statter, Esq.).—A hybrid from *Cattleya crispa superba* and *C. Loddigesii*, with small, neat, light flowers, the sepals and petals pure white, the lip having an undulated margin of a

bright crimson purple colour, and a white base. In form it was rather more suggestive of *C. crispa* than the other species.

Pinus pungens argentea (Mr. A. Waterer, Knap Hill).—Though shown as *Picea pungens*, this would seem to be a variety of *Pinus pungens*, an American species from the Alleghany Mountains, where its popular name is "the Table Mountain Pine." The variety shown is distinguished by a fine silvery glaucous colour, very bright and uniform.

CUNILA MARIANA.

THE term Dittany is applied to several different plants. For example, the *Dictamnus Fraxinella* is so named, as also are two species of *Origanum*, while *Cunila Mariana* is known in North America as the common Dittany. Possibly these names have arisen from some fancied resemblance between the plants so designated; but to say the least the similarity of the *Cunila* to the *Dictamnus* is by no means strongly



FIG. 70.—CUNILA MARIANA.

marked. *Cunila Mariana*, of which an illustration is given in fig. 70, is a tufted dwarf hardy perennial plant included in the Mint family, and related to the *Monarda*s and *Salvia*s, though differing materially in general appearance. The plant rarely exceeds a foot in height, and produces its small rosy purple two-lipped flowers in great profusion, in dense corymbose or cymose clusters. According to Gray this *Cunila* is found in the dry hills south of New York; in England it thrives in any ordinary soil not too wet, and flowers in late summer.

THE AIGBURTH NURSERY.

INDOOR plants are remarkably well grown in the Aigburth Nursery belonging to Messrs. R. P. Ker & Sons. Great changes have taken place and improvements have been effected since Mr. Ranger took charge as manager. The outside collections have been extended and improved, but the glass arrangements have considerably increased. Cyclamens have become a prominent feature; several houses are devoted to them, the plants ranging in size from the ordinary trade size to those in 7-inch pots 15 or 16 inches across. Who would trouble to keep old plants when they can be grown to this size from seed in about twelve months?

Palms are grown in various sizes by thousands from tiny seedlings to large specimens. The large Vine house built a few years ago is filled with Palms, principally Kentias. Perhaps *K. Belmoreana* is the most beautiful of all; there are several distinct forms, as may be naturally expected, from seedlings. One plant is very conspicuous for the dark almost black colour of its foliage and the drooping habit of its leaves. Pelargoniums are well grown; Roses, Azaleas, Dracæas, Camellias,

greenhouse Rhododendrons, and a host of others; also white Amaryllises are a new feature, and are being grown by thousands.

The Crotons are in superb condition, and Mr. Ranger finds some difficulty in keeping a stock of medium-sized plants. Several well known varieties have been raised, Aigburth Gem being one of the last, and it is indeed a gem; there is another to follow soon, and in its present condition it may be briefly described as a miniature form of Warreni, with a greater percentage of yellow in its corkscrew-like foliage.—W. B.



CHRYSANTHEMUM MRS. ALPHEUS HARDY.

POSSIBLY in one year more interest has been centred in this novelty than in any other Chrysanthemum, and probably for the first season no variety has given more disappointment. Numerous remarks and complaints have necessarily been made respecting its future prospects as an exhibition flower of the first rank. I have seen this season four blooms all in prominent winning collections, which go a long way to prove it can be made a good exhibition flower. At any rate I would advise those who may have met with disappointment to take courage by this fact, and if any of your readers contemplate its extermination from their collections in future not to be so hasty, but give it yet another trial if only to prove what has been the most popular opinion, that being driven in heat so rapidly in order to produce sufficient stock to meet the public demand its constitution has necessarily been weakened thereby for a time.

It may not be amiss for me to repeat for what it is worth, the remark of at least two good growers who have been the fortunate producers of large creditable specimens. At the Kent County Show Mr. Blick exhibited a remarkably fine built flower, and he told me that that was the only one he was able to cut fit to exhibit from ten plants grown by him. On the other hand Messrs. Drover told me that they only grew two plants, and had been able to exhibit two flowers, one in their winning collection staged at Portsmouth, and the other the magnificent bloom found in the Centenary class at the National; they were further of an opinion that the bloom staged by them at Portsmouth was the finer bloom of the two. Numerous readers of the Journal will, I am sure, carry with them throughout the forthcoming year pleasant remembrances of the Aquarium Mrs. Alpheus Hardy as being a really good and attractive flower. The third bloom which it was my privilege to admire was exhibited at the Crystal Palace, and grown by Mr. Alpin, gardener to W. Meath Baker, Esq., Gloucester, and the fourth by the small band of Lambeth amateurs. I am quite ready to admit that if only five good flowers of this noted novelty has been exhibited this season it is but a small percentage for the number of plants grown; but spare it yet another year, and bear in mind that when produced it is a most striking and telling variety in a collection of twenty-four distinct. —J. W. MOORMAN.

ANNIE CLIBRAN.

FROM all I can learn this deserves to be more widely known and grown. This almost goes without saying when it is noted that it is a sport from the well known and popular Mdle. Lacroix. I am reminded to draw your attention to it by receiving the subjoined reference in a letter this morning from an extensive grower:—"I regret you did not see my blooms of Miss Annie Clibran, which I had for the first time this season from the extensive Altrincham (Manchester) firm of that name when judging at our local Show. It is the pink form (sport) of Mdle. Lacroix, and with me promises to make a fine exhibition flower, especially when required early. If cut down, say in May, it makes an admirable specimen, and might be utilised for groups."

OUTDOOR CHRYSANTHEMUMS AND THE WEATHER.

After the unusually severe frosts on the nights of November 27th and 28th outdoor Chrysanthemums, even protected by walls and attached canvas framework screens, as mine are, had their beauty sadly marred, and it is doubtful if any further blooms will expand. The foliage was all limp and parboiled looking; and this is not strange remembering we had 14° of frost, or 18° Fahr., on the night of the 28th, a very unusual result in the south of Ireland, and some years not registered at all. Last year I sent you a bouquet of outdoor Chrysanthemums, beautiful bright and fresh, to grace your Christmas table, but there is no chance of being able to do so this. Curiously enough, although there has been a severe snowstorm in Dublin and northwards, there has been none except on mountain peaks in Munster.—W. J. MURPHY, Clonmel.

CHRYSANTHEMUMS RECENTLY INTRODUCED.

NEW varieties of the Chrysanthemum are being sent out annually in such large numbers, especially the Japanese, that it is impossible for any private grower with only limited means of growing and housing them properly, as well as his general collection, to be able to grow many that have not been thoroughly tested. I generally have a few novelties each year, and will here give my opinion of those that I consider worthy of cultivation for exhibition blooms, and shall be glad if other growers

will do the same with regard to varieties they may have grown during the last season—i.e., giving the height of plant, time the cuttings were received, whether strong or weak variety, and whether crown or terminal buds were taken. If this be done we shall be bestowing a great benefit upon each other, as much valuable time may be saved.

For instance, the first year that grand variety, Edwin Molyneux, came out many growers, myself included, took the terminal bud, as the crown appeared in our opinion too early, with the result that we had to be content with what might be fairly termed a very fine single variety.

MRS. E. W. CLARK.—An enormous incurved Japanese variety, the colour silvery purple. It is a strong grower, of dwarf sturdy habit, height 3 feet, and crown buds are best. The blooms last a long time after being fully expanded, in fact a bloom of this variety I showed on November 4th withstood all the journeys, and was still in good condition, and was shown on the 11th.

ROBERT CRAWFORD (Japanese) has large spreading florets, colour pleasing silvery lilac, strong grower, height 3 feet; crown buds. A grand variety.

LÉON FRAICHE (Japanese), outer florets incurving, colour fleshy pink, rather strong grower, height 4 feet, crown buds; a promising exhibition variety. The above were all received, rooted, on March 1st.

WILLIE (incurved), sport from Captivation, colour yellowish bronze, a strong grower, but unlike its parent does not grow nearly so high; it only attained the height of 3 feet with me, and the florets came much broader, and should it keep this character it will make a good front row flower. If not the last variety that obtained a certificate for and in the name of our late lamented secretary, it was certainly the last incurved variety.

MRS. S. COLEMAN (incurved), sport from Princess of Wales, has been sufficiently seen to be known to most exhibitors, but as shown by exhibitors it is certainly too much like Miss Haggas, only the lower florets showing very slightly the bronze which it is supposed and really does possess when in its true character. I shall not be surprised to see a good stand disqualified at any time should this variety be shown in its pale form in the same stand as Miss Haggas.—JOHN DOUGHTY, Angley Park Gardens.

[Mr. Doughty's suggestions as to notes on varieties in the form he adopts is a valuable one, and we hope other correspondents will follow with similar hints.]

DRESSING CHRYSANTHEMUM BLOOMS.

THIS important subject to growers and exhibitors was treated upon on Friday evening, November 7th, at the fortnightly meeting of the Walkley (Sheffield) Floral and Horticultural Society, in an address by Mr. Thomas Howe, a Sheffield workman, who for some years has taken great interest in the dressing of blooms, and has become an adept in the art. This year he is cultivating extensively for the purposes of exhibition. His remarks, which were confined exclusively to the incurved section, were received with great pleasure by his hearers, and he was complimented on the practical advice he gave.

He said in the course of his address that it required a great amount of practice, close attention, a steady mind, a good nerve, and a steady hand to accomplish the object of dressing a bloom perfectly. But while these qualities were essential on the part of the dresser something was required equally important on the part of the grower. It was impossible for a badly grown bloom to be dressed to perfection, though much is done to improve such, and the popular idea is that much more can be done, which is a great mistake. The cultivator who grows good flowers renders the work of dressing easier, and the results are far greater, because there is good ground to work upon.

In commencing to dress a flower he advocated that the centre should not be removed at random, but left in a great many cases until the finish, when the portion not needed could easily be removed. He laid great weight upon the importance of every grower for exhibition dressing his own flowers so that he could watch their development, and from the time when they are about one-third grown look out for any misplaced or deformed florets, and remove them at once, leaving the centre until a few days before the exhibition in the case of such varieties as Golden Beverley. He recommended Mrs. G. Rundle and G. Glenny as good varieties for beginners to commence with, because there is plenty of material in these flower to work upon, though they are naturally small. The worst varieties to dress were the Queen and the Empress family as they were long in the florets. The varieties with narrow florets, such as Princess Beatrice, Princess of Wales, and Hero of Stoke Newington, did not take half the time to dress.

Varieties such as Barbara, Golden Beverley, which have short-spurred florets, can only be dealt with by removing faulty plants and bad centres, and arranging the perfect florets as regularly as possible. It required some observation and attention to ascertain the best methods to follow in the treatment of the various varieties. No particular rules could be laid down as to how all varieties should be dressed, nor what sort of instrument should be used in every case. He had seen tweezers used which were too broad and gripped the florets too tightly. This caused injury to the tender skin of some, and in some varieties, particularly dark ones, this bruising was visible by a rusty appearance. Tools as fine as possible, he thought, must be used, and the greatest care be taken to learn the readiest and best means of using them.

DISQUALIFICATIONS IN CHRYSANTHEMUM CLASSES.

I DO not remember a season when so many instances of disqualification have taken place amongst exhibitors of cut blooms as has been the

case in the season just past, and amongst growers and exhibitors with a good deal of experience. In all cases that came under my notice it was due to the exhibitor not being careful in the selection of the blooms, and not from any intention to deceive the judges. When true stocks of any particular variety are cultivated there should be no difficulty in avoiding the unpleasant experience of disqualification, except through carelessness on the part of the exhibitor, or it may be just at the last moment a duplicate creeps in, unseen of course, and in the hurry of staging is overlooked. Nowadays, when there is such a great number of distinct varieties to choose from, it is highly injudicious to grow others about which there is any doubt. Where two, or even three, named varieties are found in any section that are so nearly alike in appearance that a difficulty arises in pointing out a distinction, it is much the best plan to choose the one most promising, discarding the remainder, and by employing one name only the risk of disqualification is an impossibility in the case of doubtful varieties, of which there is the greatest danger in the Golden Queen of England section of the Queen family now. Disqualifications this season have all taken place in the incurved section, strange to say. Such varieties as Jeanne d'Arc, Lord Alcester, Queen of England, Alfred Salter, Princess of Wales, and Mrs. Heale have been the transgressors. Perhaps the last two have been productive in years past of more disqualifications than any others. In this exhibitors have themselves to blame entirely, either in staging the blooms so nearly alike, or in mixing their stocks. When both are staged in true character there is a discernible difference. I also know that it is possible to cut from one plant blooms very different in colour, owing, of course, to the variation in the times when the buds from which the blooms developed were "taken." If set too early, say before the middle of August, very little colour will be found in those of Princess of Wales by the time the flowers are fully developed. Even though such blooms are taken from the true stock of Princess of Wales, an exhibitor is to blame for staging them so much out of character. If he does not run a risk of being disqualified he loses points in the quality of the flower, because experienced adjudicators do not allow the same points of merit to such blooms as I have described, therefore it behoves a competitor to stage blooms in accordance with the distinctions.

For the benefit of those who do not know the difference between them I will describe them both. Princess of Wales is the parent variety, being raised or sent out by Davis in 1864. The diameter of good blooms measure 5 inches; although some have been staged larger, this is a good average size. The form is quite of the best, incurving thoroughly towards the centre, which in well-developed blooms is high and somewhat pointed. The florets are narrow and pointed also slightly. The colour is blush, with distinct rose stripes down each floret, which gives it definition. Mrs. Heale is a sport from the above, which originated in 1867. The colour is creamy white, without a semblance of colour except that which the lower florets quickly assume with age or the base florets which become pink. The form of the bloom is similar to its parent, except that it causes a larger "shoulder," a term which will be understood by growers, but for those not initiated I will say it is the part of the bloom which is situated about half way between the base of the flower and the centre. This form is more pronounced in Mrs. Heale than in its parent, and so it is in the case of Miss M. A. Haggas, which is a sport from Mrs. Heale. In the case of Violet Tomlin, which sported from the Princess in 1888, this shoulder is less pronounced, taking after the form of the original type more clearly.

Exhibitors should aim at staging all varieties in their true character, especially having regard to the colour of each. By so doing they increase the value of the stand, lessen the risk of disqualification, which is always an unpleasant duty for the judges to perform, but which they are compelled to do in fairness to other exhibitors, whose position in the lists is improved through the error committed by an opponent, but who does not always see the faulty blooms with the same eyes as the judges.—E. MOLYNEUX.

CUT-BACK CHRYSANTHEMUMS.

ONE of the great objections to the majority of Chrysanthemums when grown with exhibition blooms, especially among amateurs, is the height to which they grow. Many amateurs with small houses would probably have to open the top ventilators to accommodate the plants.

Why should not societies encourage the system of cutting plants back by offering prizes for them? The third prize group at the recent Hull Show consisted, I believe, entirely of cut-backs, most of them with flowers which would have done credit to the cut bloom section, and the somewhat unusual spectacle was witnessed of the exhibitor having to raise the plants at the back of the group several feet. I have not the least hesitation in saying if these plants had been shown among the specimens they would have been a revelation to most of the visitors and have created considerable interest. Up to the present the cutting-back system has, I believe, only been adopted for grouping purposes except in isolated instances. As committees are now arranging their schedules for next year I recommend the foregoing suggestion to their consideration.—R. FALCONER JAMESON, *Hessle, Hull*.

THE QUEEN FAMILY.

ON page 476 of your paper there is another instance of the difficulties that are likely to arise with regard to the sports in the Queen family. At Cheltenham in the first prize stand for forty-eight distinct varieties, half Japanese and the remainder incurved, there was a bloom called sport from Lord Alcester; being myself an exhibitor at the same

place, and in the same class, I had the opportunity of seeing the said bloom, and had my attention called to it by two or three good growers of the Chrysanthemum. One of them directly said, "Why you have a bloom in your stand exactly like it," which I could see when I looked over the first prize stand. To make sure there was no error in the remarks myself and others made, the bloom was taken from my stand not only once, but three or four times, and put side by side with the sport, and the remark was "exactly the same," in colour, width of flower, and build, but I will not say in size; of the two mine was a little the smaller, but in every other particular the same as if they grew on the same plant. The bloom shown by me was a late bud of Emily Dale. Another instance, take a terminal bud or a late bud of Golden Queen of England, you have the exact form and colour as in the sport; and therefore I fail to see how it can be distinct.—R. C. T.



HARDY FRUIT GARDEN.

PRUNING OPERATIONS.—It is advisable for several reasons to push forward with the work of pruning and nailing, as not till this is done is it possible to properly complete the manuring and digging necessary near to the trees and bushes. If delayed till the spring the chances are it will not be well done, so much other work requiring to be attended to. Much of the nailing might also be completed by midwinter, this being proceeded with whenever the weather is sufficiently mild and dry; other work being found for the assistants to do in very cold weather.

PEARS.—These might well be first taken in hand, and when all are pruned and nailed much progress will have been made. All the leading branches should, where possible, be laid in to their full length, this applying to all methods of training wall trees. Left unpruned the young wood will break evenly next summer, and in many instances form fruit buds at most of the joints. Top them lightly and they will break at the ends only, the rest of the shoot being quite naked. If it is necessary to prune leading shoots, either for want of head room or for the purpose of procuring more branches, then shorten them to about one-third of their length, and a good even break will result. All lateral growth to be spurred back to within one inch or three joints of their starting point. Left to a greater length long, ugly spurs are soon formed, whereas they are most serviceable when kept closer to the main branches, therefore the walls too. Where the old spurs are somewhat crowded, and, it may be, of a greater length than desirable, it is advisable to thin these gradually, a few being sawn off every pruning season to within one inch, or rather less, of the main branch. Most of the short stumps will break afresh, and in the course of time all the clusters of spurs will be close to the main branches.

INFORMALLY TRAINED TREES.—The majority of wall trees of Pears are either trained horizontally or some form of cordon training is adopted. There are some varieties that do not answer well under this treatment, foremost among these being the Jargonel'e, while the Doyenné du Comice, Josephine de Malines, Beurré d'Amanlis, and Williams' Bon Chrétien also succeed remarkably informally trained. Where there is much head room, this including the ends of dwelling houses, stables, and outhouses, what are termed fan-shaped trees might well be planted, these being allowed to spread in all directions, and fresh branches laid in according as there is room for them. Thus treated they soon attain a great size, productiveness usually accompanying this comparatively unrestricted growth. It is the most simple of all methods of training. These and any other strong wall trees ought now to be very securely fastened to the walls. Ordinary shreds are not strong enough, and strips of leather, buckskin, strong cords, or other somewhat similar material should be substituted; such will last two or three seasons. A close look out ought to be kept for too tight shreds and nails in close contact with the branches, these often doing much harm before they are discovered.

PROTECTING FIGS.—In many districts Figs, no matter where grown, are far from being hardy. Sometimes only the points of young shoots are injured by frosts, and occasionally the trees are killed down to near the ground. In the former case the loss of a crop is inevitable, next season's fruit being produced from the points of sturdy, well-ripened shoots formed this year, the young Figs at the present time being only just visible. When the trees are badly injured it often requires several seasons before they again attain a productive state, the soft sappy shoots thrown up by cut down old trees rarely fruiting, and in addition are the most liable to be damaged by a moderately severe frost only. Where, therefore, Figs have previously been injured by frosts, and it would appear that only the south coast districts are exempt, some steps should be taken to protect the trees. If spread out considerably the branches may be unfastened and brought well up together, and these, as well as the more compact trees, can be then covered either by mats, branches of Spruce Fir or Pine trees, straw mats, or strong canvas. They will pay for the trouble taken with them. Figs being far more valuable and popular than many seem to be aware. The pruning to be deferred till the trees are uncovered in the spring.

FRUIT BUSHES AND BIRDS.—Already bullfinches have commenced destroying fruit buds, those on Red Currants being the first to suffer. Either the birds must be destroyed or the trees protected in some way, or the chances are a great failure with small fruits may happen next season. Permanent wire net-covered structures are the most economical in the long run, these protecting first the buds and then the ripe fruit from birds. Now is a good time to set about covering in a fruit quarter, and if the uprights are made of oak and the rafters of pitch-pine, all being duly coated with black varnish, this will remain sound for many years. Only $\frac{3}{4}$ -inch mesh galvanised wire netting should be used, small birds finding their way through a coarser mesh, and some provision should also be made for opening the ends when it is desirable to let in those birds that prey on caterpillars. Black thread somewhat thickly strung among the branches has a deterrent effect on birds; so also does a coating of limewash, this being mixed rather thin, and freely syringed over the main branches after the pruning has been completed. If one application is not enough it should be repeated till the bushes are thoroughly whitened, more also being syringed over them after much wet weather. In the case of Gooseberry bushes the good old plan of bringing all the branches well up together in the form of a pyramid, and keeping them there with the aid of tar-twine, never fails. It is a somewhat rough job, but two pairs of willing hands wearing leather gloves can do it easily enough. The birds cannot penetrate this dense mass of prickly branches, and these should not be opened out and pruned till the buds are out of danger.

FRUIT FORCING.

PEACHES AND NECTARINES.—*Earliest Forced House.*—Up to the buds swelling and advancing for flowering the atmosphere may be kept rather close and moist, but not by any means warm. After the buds show colour syringing should be discontinued, the trees being given plenty of time to develop a strong flower, perfect in all its parts, therefore the flowers must be brought forward gently and steadily. Admit a little air constantly, about an inch by the top ventilators, and at and above 50° it should be increased correspondingly with the temperature, but not allowing the heat to fall below 50° in the daytime, maintaining that by artificial means, allowing an advance to 65° with sun heat and full ventilation, closing for the day at 55° . Though syringing the trees is not advisable after the anthers show, a moderate amount of air moisture is essential to health. This can readily be secured by damping available surfaces, as borders and paths, in the morning and early afternoon. Avoid a moist, close, stagnant atmosphere with a high temperature at night. In frosty weather 40° to 45° , and 50° in mild weather, is ample. Let there be no mistake in respect of moisture in the inside borders. If necessary supply tepid water or liquid manure, making sure that the soil is thoroughly moistened through to the drainage. Surface waterings are little better than waste of time. Weakly blossoms are the result of imperfect nourishment, very often through the trees being kept in a dripping atmosphere whilst they have not sufficient moisture at the roots. Superabundant blossoms are a source of weakness, therefore remove those under or on the back of the trellis where they are too redundant, drawing the hand contrary way of the growth. This materially assists the swelling and strengthens the remaining flowers.

Second Early Forced House.—In many, in fact most cases, this will be the first. It is that from which fruit is to be gathered in late May or early June, where such varieties as Hale's Early, Early York, Early Alfred, &c., are grown; but where Alexander, Waterloo, and Early Beatrice are cultivated the fruit will ripen a fortnight to three weeks in advance of the first named. These matters must have consideration in starting the trees. Although fire heat is not to be applied until the new year the house must be closed at once, just excluding frost, and ventilating abundantly at 50° . Sprinkle the trees morning and afternoon, allowing time for them to become fairly dry before night. Trees are greatly weakened by keeping them constantly dripping with moisture, especially at night. Soak inside borders with tepid water or liquid manure, and protect those outside with dry leaves or bracken and a little long litter, allowing a slope to the front, so as to throw off cold rains and snow. Some tarpaulin or spare lights are an advantage, but avoid using fermenting materials, as they cause wood growth too early in the tree for satisfactory progress in the fruit.

Succession Houses.—Let no opportunity pass of attending to pruning, cleansing the house and trees. It not only improves appearances, but is better for the trees, through the longer and more complete rest assured. Ventilate to the fullest possible extent in all but very severe weather. It is better, however, to remove the roof lights, exposing the trees to the elements for the winter, but trees that have not well ripened wood must not be exposed, for the unripe growths retain sap and are liable to have those vessels ruptured in severe weather. This is the cause of unfruitfulness in many trees. Bloom buds, however, fall from an opposite cause—over-excitement, premature and over-development, with a deficiency of nutrition or lack of water at the roots. Late houses, also unheated, are best unroofed in winter; the trees seem to like our mists, drizzling rains, and the continued rains moisten the soil down to the drainage, the soil being enriched. Exposure ensures complete rest, the flowers attain to finer development than attends trees that are kept constantly evaporating from the young wood through the time they are at rest by fixed roofs. It also retards the flowering, which is of great importance in the case of late houses, and unheated or wall cases.

PINES.—Ripe fruit is generally in greatest demand in May and June, and the plants for that purpose not now showing fruit will need to have

the tendency to growth checked, which causes the plants to concentrate the strength on reproduction. Select, therefore, from the plants started last March, and having made a good sturdy growth, such as show the best indications of starting into fruit growth when subjected to a higher temperature both at the roots and in the atmosphere. Those only that have completed a sturdy growth, formed a stout base, and are now at rest, are any use for this purpose. If the plants can be accommodated in a house by themselves it will be an advantage, but failing such they should be placed in a light position in the fruiting house. Such as are not likely to throw fruit at once should be kept cool and rather dry for a month or six weeks, after which they will generally throw up fruit when subjected to a brisk temperature at the roots and atmosphere. It is not desirable to start more plants now than can be helped, as the fruit will come up more readily a month hence, and be much stronger. Necessity often causes recourse to expedients in small places that are not needed in larger. Cultivators with few plants have difficulty in maintaining an unbroken supply of fruit; their tens or twenties are not as good for successional purposes as the hundreds of the larger grower. But judgment and the acquirement of considerably more skill often enable the grower with limited means to maintain a better successional supply of ripe Pine Apples throughout the year.

PLANT HOUSES.

French and Fancy Pelargoniums.—Young plants in $2\frac{1}{2}$ and 3-inch pots that are well rooted should be placed into 5-inch pots. If the watering is carefully attended to one crock at the base will be ample. Use for a compost good fibry loam, one-seventh of decayed manure and sand. If the manure has not been properly prepared by being stacked under cover for some time dispense with it and use artificial manure instead. Do not use leaf mould, which encourages soft growth, and pot firmly to insure sturdy growth. Pinch the points out of the shoots, and place the plants where they can have abundance of air.

Zonal Varieties.—These rooted in 3-inch pots at the end of August or early the following month will be ready for 5-inch pots. If they have been pinched the shoots may be allowed to extend until they flower. For the present keep them on a shelf close to the glass where the temperature does not fall below 45° . Admit air freely on all favourable occasions. Bushy plants of the Vesuvius type that have flowered, if kept cool and dry, will flower freely again if introduced into a temperature of 55° early in January. Keep those that have grown tall rather dry, so that they can be cut back soon after the new year, and cuttings may be inserted where stock is needed.

Petunias.—Young bushy plants in small pots may be placed into 4-inch pots. For these plants add one-third of leaf mould to the compost advised for Pelargoniums. Pinch the points of any shoots that need it, and place the plants close to the glass where the temperature does not fall below 40° .

Mignonette.—Mignonette for spring flowering must have abundance of air. It has a tendency to grow quickly and weakly at this season of the year if the houses or frames are kept close. This must be avoided, or puny spikes of bloom in spring will result. Standards or pyramids that have flowered should be pinched out and placed in some airy position where they are free from frost. Under these conditions they will break again strongly into growth and flower profusely a few months hence. Do not practise feeding, it does more harm than good at this season of the year. When the days lengthen and growth is more rapid it will be beneficial. Soot water acts quickly and imparts a fine dark hue to the foliage. Artificial manure applied to the surface of the soil encourages the roots to the surface and keeps them active, which is the secret of growing good Mignonette.

Lilium eximium.—Bulbs of this Lilium imported from Japan are generally to hand this month. This is a useful Lilium for pot culture, and with us it has given greater satisfaction than the popular L. Harrisii for late flowering. The bulbs potted last year averaged seven flowers each, and did not exceed 20 inches in height. The bulbs should be placed singly into 5-inch pots in a compost of loam, leaf mould, one-seventh of manure, and sand. The bulbs should be just covered and the pots stood in a cool vinery or Peach house. Cover the pots 1 inch deep with cocoa-nut fibre refuse or other similar material, and leave until their growths are just visible. If the soil is in a proper state of moisture, and the plunging material is kept moist, no water will be needed until they are ready for removal. When taken from the ashes place them in a cool airy structure close to the glass on a base of ashes or other moisture-holding material. When they commence growing watch for aphides, and directly they appear fumigate with tobacco. When 8 or 9 inches high the plants will have abundance of roots, and artificial manure may be applied once a fortnight to the surface of the soil.

Calceolarias.—Watch for slugs, as they quickly injure these plants. The earliest should be placed into 5-inch pots. Use for a compost fibry loam, leaf mould, and old Mushroom bed refuse and sand. Be careful to place the plants on a moist base where they can enjoy abundance of air. If placed on dry shelves over hot-water pipes that have to be heated to keep out frost the plants will do no good. It is too dry for them, and they soon become a prey to aphides. Repot plants as they need more root room, and place those still in boxes into 3-inch pots.

Primulas.—Late seedlings that are now in $2\frac{1}{2}$ -inch pots may be placed into 4-inch pots, and kept perfectly cool. They will grow strong, and towards the end of April flower profusely. These plants are also good for seed bearing, and will often produce double the quantity of seed that plants raised earlier in the year will afford.

Libonias.—If given greenhouse treatment only these plants in-

variably cast a considerable quantity of their foliage. To do them well they should occupy a light position in a low house, or on a shelf close to the glass, where the temperature ranges about 50° at night. These plants are easily grown, and deserve more attention for decorative purposes.

THE BEE-KEEPER.

APIARIAN NOTES.

BEES ENTERING SUPERS.

WHAT is the best method of inducing bees to enter supers? or what is the reason my bees will not enter their supers? These and similar questions are frequently sent, not only by beginners, but by bee-keepers of some experience. Various reasons may be assigned, such as being too late in placing them on; the same result may arise from being too early. In both cases the bees will swarm; in the former because they were crowded in the hive, and the worker cells filled with eggs, larvæ, or pupæ, and as honey becomes plentiful the newly vacated cells of the hatching bees are filled with it. Whenever a queen is in any way restricted in performing her maternal duties the bees naturally raise royal cells, and when once these are begun no effort of the bee-keeper short of excising these cells and giving more breeding space will prevent swarms issuing. Even this has not always the desired effect, but a young queen with the same provisions will prevent it, at least for a time.

In the latter case the interior of the hive is cooled, much in the same way as when the brood is spread the cluster of bees is contracted, and outlying eggs and brood are extracted, and the space above and at the side of the bees is filled with honey, and bees do not travel over sealed honey freely, and swarming ensues, but in an inferior or impoverished form. On account of the egg-eating the swarm is generally much smaller than it would otherwise have been.

Bees also refuse to enter supers if breeding has been stopped through a stress of weather, the hive being much in the same condition as when supers are placed on too early. To induce bees to enter supers satisfactorily and at the right time they should be placed on at the right time, when honey is beginning to flow, and the bees almost on the eve of crowding out, and to prevent any attempt at swarming ample breeding space must be maintained. The Lanarkshire hives permit an internal examination of any division without removing one or the other, and although it is inadvisable to open up hives when bees are at active work, it is sometimes advisable to do so.

The bee-keeper and the beginner should not only study the bees, but the weather. The bees must be strong, the weather fine, and the flowers yielding honey, before supers are placed on, but then not a moment should be lost until that is done, and in such a way as to give the bees neither labour in propolisising chinks nor in reducing the temperature of the hive.

SWARMING.

The beginner is never long in discovering the vagaries of bees when swarming. Nor is it possible to give here all the instructions necessary to hive bees under every form they assume, or from any position they may take. One thing, however, is certain, the best way is to get the bees into their permanent hive at once. With the majority of modern frame hives this can only be done satisfactorily in a few instances, while many a swarm has been lost or much trouble given by a second hiving, owing to shaking the bees into them from another receptacle, which is obviated no doubt by waiting till near dusk, but necessitating the loss of a day's working, being the most important, too, to any swarm of bees.

The hiving box described some years since obviates the risk of bees taking a second flight, and secures the first day's work, which

may be augmented by giving the bees a frame or two of built-out comb. I have had swarms increase in weight from 5 to 10 lbs. the day on which they swarmed when provided with combs.

The same kind of box may be used for single-cased hives. Bee-keepers should have several pairs of steps and ladders (the former are very handy when there are good fences to cross), which prevents their destruction or the necessity of having to creep through them. Before the population increased to the extent it is there were more tall trees in our neighbourhood, and good hedges often of dense growth. Where bees often hived in such inaccessible places great difficulty arose in getting the bees out and into their permanent hive, smoke and tobacco juice being the only agents in those days employed in the dislodgment of bees from the thickets.

Gooseberry bushes and a few scraggy trees and hedges are the principal places to which our bees betake themselves for their temporary hiving place. When a swarm issues I seldom allow it to settle, but at once proceed to get the bees to take to their permanent hive (which is lighter than double-cased ones) or to the hiving box, and I seldom fail. Whenever the bees begin to cluster I either place the hive or box above them or catch them in a bellglass, tumbling them into the hive or upon the alighting board, when, with the full doorway, they as a rule commence "fanning" and enter the hive, when the others with the queen follow. After a little experience beginners will soon learn the advantage of placing bees into their permanent hive at first, and without bother. Bees very often swarm upon a twig, and all the bee-keeper has to do is to detach it from the branch with a sharp knife, and placing it upon the ground with the hive over it; the bees ascend in a few minutes. But the greatest difficulties arise when the bees take to places that a hive or box can neither be placed over nor under them. When the bee-keeper observes them taking to such places he should prevent their settling by smearing the place with crude carbolic acid. A few feathers tied to a light rod of sufficient length to reach the place saturated with the acid is all that is necessary to drive them from their would-be retreat, and a little smeared on the part will prevent their returning, and is almost certain to cause them to settle in a more convenient place.

If at any time a swarm settles on a tree too high to reach from the ground or by the aid of an ordinary ladder, I use my hiving apparatus, upwards of thirty years old. It consists of a light wooden box, but may be made of cloth upon a frame of wire, the lighter the better, and a series of poles each about 4 feet 6 in length, and are held together by long tin ferrets, and may be extended to a great height.

One of the poles, which (the upper one) has a revolving arm and a pulley on the top back and front, which when a cord is passed over them, which reaches from the bottom at whatever the length of the poles may be, and suspends the hive at the top under the front pulley.

To secure the swarm hoist the hive until it can be set right above the cluster and the bees soon creep into it. To hasten their doing so apply the rod with the carbolicised feathers to the bottom of the cluster, and you will be delighted with the simple but effectual plan. When once the bees are mostly up slacken the cord and let the hive down by its own weight, then transfer to their permanent hive without delay.

There is still another way the hiver may be applied. It sometimes happens that it is unsuitable to hive the bees in the manner described, and they have to be shaken into the box. An arrangement in the shape of two hooks near the top of the rod on which the hive is hung; a small cord passes through a staple and is fastened to the light lid of the box, and is raised or lowered by the operator on the ground, who, if the bees are favourably suspended by a lateral movement of the hiver on the cluster, most of the bees with their queen will fall into it, and in a moment on slackening the cord the lid drops without killing a bee. If an assistant is present, and near the cluster, he can arrange the cord so that they may be let down gently, as stated above.

The above hiver, the oldest of its kind, is perhaps also the best, and is a very superior appliance to the still older plan of sticking a pitchfork into a straw hive and holding it over a swarm; very pretty to see as a picture, but a very tiresome and inconvenient plan when put into practice. Even when the bees have been placed into the hive they have to be lowered to the ground at an angle, and when the pitchfork is removed it so jars the bees as to cause many of the bees to take wing; whereas with the hiver, when not suitable to lower by the cord, the poles are easily disjointed until the hive is reached.—A LANARKSHIRE BEE-KEEPER.

BEEES IN THE NORTH.

As regards East Yorkshire the outlook is very discouraging. In many places bees have died through neglect during the summer, and failing to feed them for the winter. Some bee-keepers who started here a few years ago in high spirits and followed their hobby with enthusiasm are now disgusted with their little friends. When visiting a friend some time ago I passed by a garden where I had often seen a row of bee hives, of which the owner seemed to take great care; but things had changed, many of the hives were standing in a corner of the garden empty, the bees having died, and the hives were for sale. Another bee-keeper, who was regarded as an authority, told me seven standard frames for any hives were sufficient where sections are wanted. To-day that gentleman has not a living bee, and others will soon be in the same condition. The cause is found in neglect, small hives, old queens, and insufficient supplies of food. It is very different in apiaries where bees are located in deep hives with young queens and plenty of food. "A Lanarkshire Bee-keeper" from time to time has condemned small hives, and they cannot be too strongly condemned, as where from seven to nine bars and a crate of twenty-one sections compose the hive little is obtained, and swarming is the rule. My best results this season were obtained from twenty standard bars on the tiering principle; not only did they give a little surplus, but required no feeding in so bad a season. The advice given in this Journal by "A Lanarkshire Bee-keeper" on tiering hives I have found sound, and those about to give up bee-keeping on account of its unprofitableness should try the tiering plan. I have made a Lanarkshire hive from instructions given in this Journal, and I am pleased with its arrangements. It is a cheap hive, easy to move about; the only defect is there is in so many bars when you want to catch the queen and prune out queen cells, but that may soon be overcome; however, this with ventilating floors shall be my plan in the future. Will "A. L. B. K." please say what kind of supers he uses for his hives?—HOWDENSIRE BEE-KEEPER.



All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Book (J. B.).—The work you require is published by Messrs. Blackwood & Sons, Edinburgh, and can be obtained through a local bookseller.

Pruning Marechal Niel Rose (John Marsh).—Questions on this and all gardening subjects sent by regular subscribers to this Journal are most willingly answered through its columns.

Fruitless Trees (Yew).—Your letter has arrived too late for enabling us to do what we intended this week. You have no doubt done what is right under the circumstances. Too deep planting is undoubtedly one of the best preventives of health and fruitfulness in trees.

Scabious in Pots (E. T. H.).—You had better not disturb the seedlings at the present time, as in pots plunged in the ground the plants will make little or no growth for some time. It would be advisable to afford them some protection in very severe weather. The right time for transplanting them will be when early spring growth commences, and they may possibly need a little protection afterwards.

Roses for Market (Rose).—We can name you six H.P. varieties if you wish, but you will be wise in growing several plants of one variety only for the markets that you name. The variety most in demand in the bud state in those markets is Général Jacqueminot, and if you succeed in producing expanding buds early you will be able to realise good prices. Pinks and other colours do not sell so well as do good reds, and amongst these we know of no variety so suitable for the purpose as the one named.

Destroying Mealy Bug and Scale. (Inquirer).—Methylated spirits will destroy mealy bug, as we stated on page 281 last week. You are not the only gardener who has found too strong applications of petroleum injurious to Vines and Peach trees. A mixture is recommended on page 392 of our issue of October 30th, which if thoroughly applied will destroy scale and other insects. The hotter it is used the better, but neither scale nor mealy bug can be exterminated by one application of anything.

Iris foetidissima—The Roast Beef Plant. (J. W., Worcester-shire).—Your plant is a native of England, and is found wild in many districts. It is much grown now for its capsules or bright red seeds, which are employed for decorative purposes in the autumn with good effect. The peculiar title "Roast Beef Plant" has been applied to it because the leaves when bruised give out an odour which is thought to resemble roast beef mixed with garlic. It is easily cultivated in ordinary garden soil provided the situation be neither excessively wet nor dry. Two other species of Iris are also regarded by some as natives of England—i.e., *Iris pseudacorus* and *I. tuberosa*, but the latter is excluded by some authorities.

Forcing Lilac (E. M., Notts).—White Lilac is obtained early in the year by placing well budded shrubs or bushes dug from the ground in a warm dark place, such as a well heated shed or Mushroom house. Shrubs of the common pink Lilac are usually the most plentiful, and the flowers come white when they expand in darkness. A temperature between 60° and 80° is suitable; the higher it is the sooner the flowers appear, and we have known them quickly obtained in a temperature of 90°. The shrubs must be syringed occasionally till the growth starts, and the roots be kept very moist. In addition to the heat from hot-water pipes, some persons have heaps of sweet fermenting materials, consisting of leaves mainly, in the Lilac shed, turning them occasionally, for the diffusion of heat and moisture, but an excess of moisture must be averted or the flowers will suffer. If you have not any shrubs that you can dig up you must apply to nurseries for them. White Lilac can be forced in glass structures, when small shrubs of the White variety are obtained and potted. The best of these are grown in France, and imported and sold by English nurserymen.

Stocks for Fruit Trees (J. B. & Son).—You call yourselves "gardeners," but ask the most extraordinary questions we have received from members of the craft. You first ask "If shoots cut off any free-growing Apple trees are layers of Paradise stocks?" No; those shoots would not be layers at all, but cuttings of Apple trees. If you want to raise Paradise stocks you must purchase trees of the Paradise Apple, and when established bend down the shoots, notch, and peg them into the ground as layers to emit roots. Next you ask, "If we get shoots off any free-growing Pear tree, and lay them in to strike root, what sort of stocks would they be called?" They would be called Pear stocks raised from cuttings, not layers. But that is not the way to raise Pear stocks, and if you try the plan you will find far more of the cuttings die than grow. Pear stocks are raised from pips or seeds, and Quince stocks, for grafting Pears on, from layers and cuttings. Your last question is a curiosity. "Shoots from Plum tree roots budded, wouldn't they be the same as the Plum tree was worked on?" If the buds grow that are inserted in the suckers of Plum trees the fruit that follows will be the same as that of the tree from which the buds, not the suckers, were taken. If the buds inserted fail, and the suckers grow and bear fruit, this may or may not be the same as that of the tree from which they were taken. If it was raised from a sucker the variety would be the same; but if the tree itself grew from inserted buds the suckers would not produce fruit the same as the tree did. We think you have a good deal to learn on a subject which "gardeners" are expected to understand, and the above small elementary lesson, we hope, may be of service.

Early Bulbs (J. C.).—You should have no difficulty, as if the Roman Hyacinths were potted early they will advance rapidly in gentle warmth, and a succession may be maintained by introducing a pan, box, or a few pots once a fortnight according to the demand. The earliest Dutch varieties are Homcrus, single red, and La Tour d'Auvergne, double white. These, if potted when advised, will have been removed from the plunging material and have become green in a cold frame. A few of both may be introduced into a temperature of 50° until they display signs of starting. Nothing is gained by placing them into brisk heat to force into bloom. No treatment is more certain to ruin them, for they are unduly forced out, and commence expanding their bells at the top of the spike instead of the base. They should be started gradually until they are growing, and then given a temperature of 60°, in which they will unfold their spikes in good condition. Early Tulips, such as scarlet Duc Van Thol and white Pottebakker, will also be ready for starting

These should have the same treatment as the Hyacinths until it is certain they have commenced growth, when they can be forced in brisk heat. When once growing Tulips will stand more heat than Hyacinths. We have frequently forced them into bloom in a close propagating frame where the night temperature of the house does not fall below 65°. This course is not advised, but when the blooms are required it may be safely practised.

Grubs in Soil (W. R.).—The grubs are a species of *Julus* or small millipede. They are most common in wet soil that contains much decaying animal matter. Perhaps your land needs draining. We should work in a liberal quantity of lime, placing lumps in heaps of a bushel on every 20 or 30 square yards, covering with soil dug from round them, and when the lumps swell and fall, spread the lime, and dig it into the land. When planting, surround the bulbs with wood ashes, the more the better, with a little soot mixed among them. Carrot baits inserted in the beds would still be useful, not, however, leaving them to rot in the ground. Surely the insertion of these would not be a formidable task, nor examining them at intervals afterwards. Affected bulbs, with tubers of Begonias and corms of Cyclamens attacked by the pest, should be well washed with a solution of softsoap, 3 ozs. of this being dissolved in a gallon of soft boiling water, stirring well in at the same time a wineglassful of petroleum. The solution should be used hotter than your hand can be borne in it, holding the tubers in a pair of padded pincers, and applying the solution with an old spoke brush, scrubbing it well in; in fact the tubers may be dipped in the solution for a few moments, water of a temperature of 180° not injuring them. They will endure more heat than their enemies, as you may prove by experiment. We should burn, or rather scorch, the soil used in potting, and thus destroy all animal life, then moisten the compost before using, as it never answers to pot anything in dust-dry soil. The scorching will improve the soil, as you may possibly have seen in the richer green of crops growing on ground where there has been a fire over those in the surrounding land.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*B. & Co.*).—Maréchal de Cour. (*A. O.*).—Beurre Diel, small.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*J. W., Worcestershire*).—The seeds you send are those of *Iris foetidissima*. See reply above. (*T., Middlesex*).—1, *Masdevallia tovarensis*; 2, *Masdevallia Lindenii*; 3, *Odontoglossum crispum*; 4, *Ondidium ornithorhynchum*. (*J. J. C.*).—1, *Lomaria gibba*; 2, *Nephrolepis davallioides*; 3, *Onoclea sensibilis*. (*W.*).—It is apparently a portion of a leaf of one of the *Kentias*, perhaps *Kentia Forsteriana*. (*A. B. D.*).—*Hemantus albilos*.

TRADE CATALOGUE RECEIVED.

James Carter & Co., 237 and 238, High Holborn, London.—*Illustrated Vade Mecum and Seed Catalogue for 1891.*

Hogg and Wood, Coldstream and Duns.—*Catalogue of Nursery Stock.*

C. Platz & Son, Erfurt.—*Seed List 1890-91.*

Dicksons & Co., 1, Waterloo Place, Edinburgh.—*List of Select Roses, 1890-91.*

William Clibran & Son, Oldfield Nurseries, Altrincham.—*Catalogue of Roses, Coniferae, Shrubs, and Fruit Trees.*

Hardy, Bruin, & Co., Graham Street, Humberstone Road, Leicester.—*Illustrated Catalogue.*

COVENT GARDEN MARKET.—DECEMBER 10TH.

BUSINESS quiet, with supplies equal to the demand, with exception of Apples, foreign consignments of which are inferior generally.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, $\frac{1}{2}$ sieve	1	6	to	6	0	Lemons, case	20	0	to 28 0
" Nova Scotia and						Melons, each	1	0	2 0
Canada, per barrel	15	0		26	0	Oranges, per 100	4	0	9 0
Grapes, per lb.	0	9		3	0	St. Michael Pines, each..	2	0	6 0
Kentish Cobs	65	0		70	0	Strawberries, per lb. ..	0	0	0 0

VEGETABLES.

	s.	d.		s.	d.		s.	d.		s.	d.
Artichokes, dozen ..	0	0	to	0	0	Mushrooms, punnet ..	1	6	to	2	0
Beans, Kidney, per lb. ..	0	6		0	0	Mustard & Cress, punnet	0	2		0	0
Beet, Red, dozen ..	1	0		0	0	Onions, bnshel. . . .	3	0		4	0
Brussels Sprouts, ½ sieve	1	9		2	0	Parsley, dozen bunches	2	0		3	0
Cabbage, dozen ..	1	6		0	0	Parsnips, dozen ..	1	0		0	0
Carrots, bnsh ..	0	4		0	0	Potatoes, per cwt. . .	3	0		4	0
Cauliflowers, dozen. .	2	0		4	0	Rhubarb, bundle ..	0	2		0	0
Celery, bundle ..	1	0		1	3	Salsafy, bundle ..	1	0		1	6
Coleworts, doz. bunches	2	0		4	0	Scorzonera, bundle ..	1	6		0	0
Cucumbers, doz. . .	2	0		3	6	Seakale, per bkt. . .	2	0		2	6
Endive, dozen ..	1	0		0	0	Shallots, per lb. . .	0	3		0	0
Herbs, bnsh ..	0	2		0	0	Spinach, bnshel ..	1	0		2	0
Leeks, bnsh ..	0	2		0	0	Tomatoes, per lb. . .	0	4		0	8
Lettuce, dozen ..	0	9		1	3	Turnips, bunch ..	0	0		0	4

CUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	4	0	to	8	0	Mimosa (Fench.,) per bnch	0	9	to 1 0
Bouvardias, bunch ..	0	6		1	0	Narciss (Paper-white),			
Carnations, 12 blooms ..	1	0		2	0	French, doz. bunches ..	4	0	10 0
Chrysanthemum, 12 blms.	1	0		3	0	Do. Do. English,			
„ 12 bunches ..	3	0		9	0	per bunch	1	0	1 6
Epiphyllum, doz. blooms	0	4		0	6	Pelargoniums, 12 trusses	1	0	1 6
Eucharis, dozen	3	0		6	0	„ scarlet, 12 bnchs	4	0	6 0
Gardenias, 12 blooms ..	6	0		9	0	Poinsettia, dozen blooms	4	0	9 0
Hyacinths (Roman), doz.						Primula (double) 12 sprays	0	6	1 0
sprays	0	6		1	3	Roses (indoor), dozen ..	0	6	1 6
Lapageria, 12 blooms ..	2	0		4	0	„ Red, 12 blooms ..	1	0	2 0
Lilac (French) per bunch	5	0		7	6	„ Tea, white, dozen..	1	0	3 0
„ longiflorum, 12 blms.	4	0		6	0	„ Yellow	3	0	5 0
Lily of the Valley, dozen						Tuberose, 12 blooms ..	0	4	0 9
sprays	3	0		6	0	Tulips, per dozen ..	1	0	2 0
Maidenhair Fern, dozen						Violets (Parme)	3	0	4 6
bunches	4	0		9	0	„ (dark)	1	6	2 6
Marguerites, 12 bunches	2	0		6	0	„ (English), doz. bnch	1	0	2 0
Mignonette, 12 bunches..	3	0		6	0	Wallflower, doz. bunches	3	0	6 0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Aralia Sieboldi, dozen ..	6	0	to	12	0	Hydrangea, doz. pots ..	9	0	to 18 0
Arbor Vitæ (golden) doz.	6	0		8	0	Lilium lancifolium, doz.	0	0	0 0
Chrysanthemum, per doz.	6	0		24	0	„ longiflorum, doz.	0	0	0 0
Climbing Plants, various,						Lily of the Valley, per pot	4	0	6 0
dozen pots	4	0		9	0	Lobelia, per doz.	0	0	0 0
Dracæna terminalis, doz.	24	0		42	0	Marguerite Daisy, dozen	6	0	12 0
„ viridis, dozen ..	12	0		24	0	Mignonette, per dozen ..	4	0	6 0
Epiphyllum, per dozen..	12	0		30	0	Musk, per dozen	0	0	0 0
Erica, various, dozen ..	12	0		18	0	Myrtles, dozen	6	0	12 0
Euonymus, var., dozen ..	6	0		18	0	Nasturtiums, dozen pots	0	0	0 0
Evergreens, in var., dozen	6	0		24	0	Palms, in var., each..	2	6	21 0
Ferns, in variety, dozen..	4	0		18	0	Pelargoniums, per doz. ..	0	0	0 0
Ficus elastica, each. . .	1	6		7	0	Poinsettia, per doz. . .	9	0	15 0
Foliage plants, var., each	2	0		10	0	Rhodanthé, per dozen ..	0	0	0 0
Fuchsia, per doz. . . .	0	0		0	0	Stocks, per doz. . . .	0	0	0 0
Geraniums Scarlet, p. doz.	2	0		6	0	Tropæolums, various, per			
Hyacinths (Roman), doz.						dozen	0	0	0 0
pots	8	0		10	0	Tulips, dozen pots	8	0	12 0



CATTLE.

SURELY there is something radically wrong in cattle management, when we are told with all due gravity that cattle bought in spring have paid nothing for their summer's grass? Why buy at all if a loss is so probable? Again and again are we told of losses upon purchased cattle, and we do wonder at the folly of those who thus persist in spending their strength for nought. That, certainly, is not the way to make farming answer. If cattle must be bought, then we say buy right, feed right, sell right; aye, and it can be done too. We happen to know two large farmers in the eastern counties, from both of whom we have recently seen reports of the year's results, and we are bound to say that while one is crying out about the failure of spring-bought cattle to afford anything like a profit for the summer's grass, the other quietly admits that he is entirely satisfied with results from his purchased beasts. But then, you know, he bought right, and the other certainly did not do so. Eye and hand should always tell one clearly if the price asked for store cattle is right; if it is not, and no profit appears possible upon the transaction, why proceed any further with it?

The general answer to all this is found in the fluctuations of markets, and store beasts are frequently bought at high rates upon the chance of a profit being realised upon them as fat beasts. We may be told that one must risk something in business, and we agree, but in common prudence one should take all possible precaution to minimise that risk. If we go into an open market for store cattle we know that every dealer will puff his goods, and we ought also to know that the beasts which he offers contains several inferior. The "bunch" is made up for sale, and will not be separated easily; but it may be done, especially if trade is slow, as the dealers know full well that every time they have to remove the beasts from one market to another something is knocked off their profits.

The reason why purchased cattle are seldom if ever equal to home-bred beasts is obvious enough. The former have passed

through the trying alternations of scarcity and plenty, have been worried and knocked about in transit; the latter, thoroughly well bred to begin with, have known no break in the peace and plenty of their placid existence; well fed, well sheltered, and cared for in every way they have never lost the sleek condition of infancy, but have gone steadily on, gaining at least 1 lb. in weight daily, and we do not wonder at such phenomenal results as that of a shorthorn calf bred by Mr. Pearce of Market Drayton, who sent it to the butcher at eighteen weeks old, and it weighed when dressed, without head and feet, 37½ stone, or about 2 lbs. a day of dressed meat from birth. This calf must have been exceptionally well bred, for it had nothing but the cow's milk till within three weeks of its being killed, when a little meal was given it daily. This was of recent occurrence, and as an example may be considered a little beside the mark. If so, let us take a steer of twenty months that has been well done from its birth; now, we are well within bounds to put the increase of weight at 1 lb. a day, or half that of Mr. Pearce's calf, and this at twenty months gives us a prime beast weighing something over 600 lbs.; but if we say 600 lbs. at 7½d., the present market price, we have a total value of £18 15s., and experience has shown that the value of the beast would really amount to at least £20, for the old Sussex standard of excellence (£1 a month) is still a very safe one to apply to choice home-bred beasts. Of course they run for at least several months with the cow and have all the milk, and particular attention is given to induce them to take other food as early as possible, and they are not turned out on pasture in spring till the herbage is so abundant that are soon satisfied. In point of fact they are never on short commons at any period of their existence, and one never hears complaints of the markets from the owners of such beasts.

There can be no good reason why those sleek 20-pounders should not be the rule, and not the exception. Only the reckless purchase of dear store beasts must cease, so too must the equally reckless mismanagement of cattle. If they have insufficient food, or that which is not sufficiently nourishing; if they are exposed to inclement weather, or are kept in a state of filth and discomfort; if they are crowded together in a yard without the separation of younger from the older animals, they will lose money very much in proportion to the degree of mismanagement. Very good is it, we know, to turn out so many beasts to graze in spring upon marsh or other rich pasture, and to have them come off in October straight to the butcher. But to do this well they must leave the yards in spring fairly forward in condition, and the man who buys a lot of lean kine in spring and complains in autumn that they have not paid for the summer's grass has only himself to blame. Such beasts never have answered well, and never will, for by autumn they have about reached the condition in which they ought to have been in spring at turning out time.

WORK ON THE HOME FARM.

The cold snap at the end of November should have induced everyone to look more closely than usual to the comfort of their live stock. The fall of snow was heavy generally, and we hear of as much as 2 feet of snow in East Kent. Thursday was the coldest November day we have had for many years, and it was with regret that we saw a lot of cattle being foddered with hay upon the snow out on the open pasture in the Midlands on that day. No shelter had they but the hedges, and the hay was really only just so much fuel to sustain vital heat in their sorely tried bodies.

Ewes forward in lamb have constant attention now, and are kept as quiet as possible. A frequent look round is desirable in case any of them become east, or rolling over upon their backs, as they are then unable to rise, and struggle till they are exhausted and die. They are now having some Pea straw in racks, and some of the chaffed winter Oat straw, of which we always have an abundant store at this season of the year. Feed upon pasture generally is running short, but we have a considerable extent of pasture reserved for the ewes that is full of feed, and we shall bring them upon this now shortly in readiness for the lambing in January. We are using no corn or cake for the ewes, as they are in excellent condition and will require none till after the lambing, when a moderate quantity is good both for the ewe and the lamb she suckles. Ewes having to make out upon poor pasture now become very poor, the lambs come weakly, and results are never satisfactory. No Turnips are given to ewes now, and they are kept altogether away from folds upon arable land, as the risk of injury from the strain made upon the system

if the land becomes at all wet and muddy is too great. We hold over the roots till after the lambing, when Mangolds are at once given freely upon the pasture, and late Swedes are left out upon the land specially for the ewes in folds, and we generally obtain excellent crops of Barley afterwards. A lot of crones or overage ewes drafted from the breeding flock are now in folds upon some poor pasture, which will be left so richly stored with fertility that a full crop of grass next season is a certainty. We commend this method of pasture renovation as having answered well with us upon poor thin land on a hill farm. Such folding in winter upon low lying pasture or heavy land would probably not answer, but it is quite certain to do so upon light land.

SEEDS AND ROOT STANDS AT THE AGRICULTURAL HALL.

THE annual Show of the Smithfield Club was opened at the Agricultural Hall, Islington, on Monday, December 8th, and proved a very satisfactory display. The entries in all the chief classes for cattle, sheep, and pigs are very numerous; the galleries are, as usual, together with a considerable space on the ground floor, packed with all kinds of agricultural machinery, from steam ploughs to butter churns.

With the exhibits of the large seed firms we are, however, chiefly concerned here, and therefore append a few particulars respecting them, taking them in the order they were visited. Messrs. Sutton & Sons, Reading, have an extensive and handsome stand, upon which the upper part is devoted to semicircular kinds of fine Swedes and Mangolds, the lower portion being elegantly panelled, and shows a series of photographs of the Reading establishment. There also are samples of the Grasses and other seeds, with new and approved varieties of Potatoes especially tested for their disease-resisting qualities. The more important of the roots are in Swedes, Crimson King and Champion, both very handsome, while of the Mangolds, Crimson Tankard, Golden Tankard, and Mammoth Long Red are equally good.

Closely following the above, Messrs. J. Carter & Co., High Holborn, have an extremely attractive exhibit occupying considerable space. The roots, which constitute one of the chief features, are arranged in substantial mounds, fine clean even samples of Elephant, Green Globe, and Prizewinner Swedes, together with Golden Tankard, Golden Intermediate, and Warden Prize Mangolds. Besides these there is an interesting series of the new hybrid Wheats raised by this firm, which are well worth attention for their fine quality. Potatoes all various, select vegetables, Sugar Beet, and samples of the principal farm and garden seeds, together with Grasses in mixture and otherwise, serve to furnish a very interesting stand.

Upon the opposite side of the gallery, in their customary position, Messrs. E. Webb & Sons, Wordsley, Stourbridge, have a tasteful and effective display of their leading specialities in roots and seeds. Of the former there are admirable specimens of the following Swedes—Purple Top Mammoth, Imperial, a fine purple variety; New Invincible, and Giant. Adjoining these we find such well-known Mangolds as Mammoth Long Red, Yellow Flesh, Tankard, and Champion Yellow Flesh, all good samples. Amongst the grains, Challenge White Wheat and Oats, Kinver Chevalier Barley, and Prolific Black Tartarian Oats are noticeable, together with Potatoes, Peas, and other vegetables in abundance.

Again passing round the gallery to near the stairs we find Messrs. Harrison & Sons, Leicester, have a well furnished stand, comprising very creditable roots and seeds. Swedes are well represented by Defiance, Normanton Globe, Green Barrel, Perfection, and Red Heart. Of Mangolds there are Giant Long Red and Golden Tankard, while Carrots, Onions, Beet, Parsnips, and Potatoes are well represented by select varieties.

Messrs. Oakshott & Millard, Reading; King of Coggeshall; and Raynbird, Caldecott, & Co., Bawtree, also have effective stands of roots and seeds. Messrs. Dicksons of Chester show a collection of Apples, and the English Fruit and Rose Company, Hereford, have an excellent collection of about fifty varieties of Apples.

METEOROLOGICAL OBSERVATIONS.

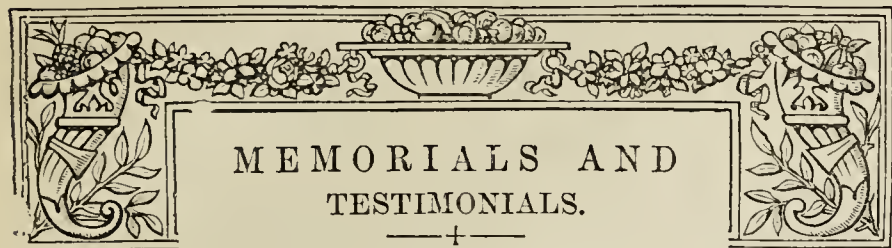
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain
1890. November and December.		Barome- ter at 32° and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		
			Dry.	Wet.			Max.	Min.	In sun.	On grass	
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday	30	30.392	35.1	24.4	N.E.	38.5	38.9	21.6	43.9	17.8	—
Monday	1	30.210	36.0	34.7	S.	37.9	39.9	23.9	49.3	19.2	—
Tuesday	2	29.806	34.3	34.0	N.E.	37.9	35.4	27.9	37.1	29.4	—
Wednesday	3	29.726	34.8	34.4	N.E.	37.4	42.4	33.3	42.9	32.3	0.041
Thursday	4	29.708	41.7	41.7	N.E.	37.9	43.7	34.3	47.6	35.2	0.062
Friday	5	29.848	37.6	35.3	E.	39.1	40.5	35.3	41.3	35.2	—
Saturday	6	29.993	37.4	35.0	E.	39.2	39.1	36.6	41.2	35.6	—
		29.955	35.3	34.4		38.3	40.1	30.4	43.8	28.0	0.103

REMARKS.

- 30th.—A little fog in the morning; sunshine in the middle of the day; fair evening.
 1st.—Sunshine through slight fog in morning; dense fog from 1 to 2 P.M., and rather dense nearly all afternoon; clear night.
 2nd.—Slight fog early, dark as night for a few minutes about 9.15 A.M., foggy morning fair afternoon, and fog again in evening.
 3rd.—Overcast and slightly foggy.
 4th.—Almost continuous rain or drizzle till 5 P.M.; overcast evening.
 5th.—Overcast but dry. 6th.—Overcast and dry.
 A cold but generally dry week.—G. J. SYMONS.



MEMORIALS AND TESTIMONIALS.

THE year now drawing near its termination will be remembered as a fatal one amongst horticulturists. Many excellent men have been called away, and all who knew, and especially who worked or associated with them, mourn their loss sincerely. The esteem in which they were held is testified to in the most practical manner by the movements that followed to perpetuate their memories befittingly. Large sums of money have been collected for this purpose, and the amounts have probably been enhanced because they either were, or it is understood will be, applied to charitable purposes, or to the advantage of the bereaved. Happily appeals for funds when so invested, and by which the names of departed friends are kept in remembrance, are never made to deaf ears or hardened hearts in the gardening community. The larger the sums then raised the greater is the general satisfaction, not because the dead are more honoured by a few large sums than by a greater number of small offerings, but because the larger the aggregate amount collected the greater or more extended the benefits to the living who need relief or assistance. But even when memorial funds are applied in the manner indicated there is no mistaking the feeling which largely prevails that individual gifts of large sums and duly published, have two distinct tendencies, neither of which is by any means generally approved—namely (1) inducing persons to give sums which they can perhaps ill spare, yet who object to be “seen” contributing, by comparison, ridiculously small amounts; or (2) declining to contribute anything. It is not in the least necessary to pass any opinion on such decisions, they are in accordance with human nature, and it is with this we have to deal. It is not to be supposed, however, that generous contributors do not give willingly and freely. In some cases we are convinced that they would prefer not to have their offerings published to the world, and we know of those amongst us who do much good by stealth, for we have been made the medium of conveyance of substantial assistance in cases of need on the condition that the names of the donors should not be disclosed.

The subject under notice is referred to now because of communications which have been received that it would serve no good purpose to publish, and of expressions that are so frequent as to have become common property, that the methods of memorialising do not by any means meet with common approbation. Our own action, and that of our contemporaries, is objected to in publishing printed lists of contributions time after time. In most cases we believe this has been done gratuitously to assist charities, and we suspect would be repeated were occasion to arise. Then what is referred to as “begging and touting” is a practice that is strongly condemned on the allegation that money so obtained is not the true way of representing the esteem in which friends are held. There is this to be said on that view of the case—namely, it is not conceivable that any person whose memory is thus honoured could, if living, approve of any such thing; and more, there cannot be a doubt that most persons now striving to do their duty would very much prefer silence after their decease to strained action of that kind in raising money to memorialise their names. We are sorry to hear the vulgar term “touting” so frequently in connection with memorial or testimonial movements of late, with which the practice indicated cannot be otherwise than incongruous. It is right that

the proposals be placed fully and fairly before the public, and then persons should be left to make their offerings; but the persistency with which applications are made for some object or other is undoubtedly creating a revulsion of feeling against that which is good in itself—doing honour to the living or the dead who have, by their lives and conduct, merited public recognition. Zeal is an admirable quality, but requires to be tempered by discretion for producing the most satisfactory results. “We live in testimonial days,” observes one of our correspondents; “and it appears as if some of the movers in these matters consider that the result is not a success if the amount collected is not greater than all previous amounts of the same nature. Large amounts were not collected, were not thought necessary, when such men as Loudon, Lindley, Berkeley, and Rivers died; but they are not the less remembered on that account. Their works are their greatest memorials, and the portraits of such of those men as were subscribed for were considered as affording sufficient evidence of the esteem in which they were held by their friends and associates.”

This brings to mind the latest case, that of the late Mr. Shirley Hibberd. Active, industrious, ever ready to help in any good cause, something should be done, and will be done, apart from his own works, to keep him in remembrance; and so far as we can ascertain, after taking some pains to test current opinion, this is overwhelmingly in favour of a portrait to be placed with those of Lindley, Veitch, Rivers, and others in the Lindley library. Recognising to the full Hibberd's services in horticulture, he cannot, under the most generous estimate, be regarded as a greater man than they. One of those portraits was obtained by subscriptions among the Council of the Royal Horticultural Society; and the other (Mr. Rivers) by general offerings of those who had pleasure in sending them when they learned of the project in view. The cost of the portrait was, we think, about £40 or £50, and the surplus, which was similar in amount, was given to the Gardeners' Royal Benevolent Institution. Will not something of the same kind meet every reasonable claim that can be advanced for our late friend? But as our charitable institutions are not weak and ill supported at the present time, could not the surplus be given to his child? This would be the most graceful of all tributes to his memory, and one which would touch him the most deeply if he could know it was done. It was with feelings of gladness that all who attended the meeting last week heard this child was provided for, but the provision cannot be so great that an addition would be a superfluity; and as coming from her father's friends it would be to her something very near akin to a father's love, and in time so felt—a token that he was loved in life by those who knew him best, and in this meet form remembered.

For perpetuating Mr. Hibberd's memory in some such manner as suggested his friends, high and low, rich and poor, would, we believe, give their offerings gladly, and much more willingly than towards raising a large fund for sending young gardeners abroad for completing their education, or disbursing among professional lecturers at home on scientific subjects connected with horticulture. Granted that those projects are good in themselves, they would not only involve the sinking of a considerable amount of money, but besides they are not in harmony with the mind or habits of the man whose name they would commemorate. Shirley Hibberd was not a learned savant, but emphatically a popular teacher on gardening, and delighted in garden experiments; and having this in view, another suggestion made at the meeting for establishing a Hibberd Fund for conducting experiments at Chiswick would be more in consonance with his tastes, also appropriate, as he was a member of the Garden Committee; and if the surplus from a portrait should be large possibly something might be done to keep his memory green at Chiswick, as well as for his child. These are practical matters, and Mr. Hibberd was a practical man, a man of the people too, and the greater the number of small sums

of even 2s. 6d. or 5s., more or less, from professional and amateur gardeners not rich in this world's goods, but who would give their mites heartily, the greater would he, if living, appreciate the result apart from the sum collected. But the hewers of wood and the drawers of water in gardening must never forget that it is as easy for some to give pounds as it is for others to give pence, and that large sums may be, and are, given as freely, cheerfully, and with the same purity of motive as are the mites of the masses. This appears to be a case in which all should join—in which there should be less of pressing for money than seems to have become customary, but that each should give just what he feels he would like to give and no more, quite regardless of the contributions of others, who may be either better or worse off than himself. This we are sure must be the wish of the Committee, and we believe the small amount representing the day's wage of a gardener would if sent be as much appreciated as would a sum equal to a gardener's quarterly salary given by a person of wealth.

What appears desirable in providing testimonials or memorials in the gardening community for or in remembrance of men of national repute is a greater number of subscribers of small or moderate amounts. At present a comparative few support these movements. It is not the amount subscribed by a few, giving because somebody else gives, and giving as much as he, that constitutes the essence of memorial tributes to the memory of the dead, or as testimonials to the worth of the living, but the number of persons who gladly and spontaneously cast their offerings into the treasury, or in other words the number of givers rather than the amount subscribed, reveals the truest measure of genuine public sympathy with all movements such as those under consideration, and which are now being somewhat frequently discussed by various persons who are interested in them. We should like to see a very long list of subscribers to the Hibberd Memorial Fund.

LETTUCES.

THIS vegetable was referred to by "J. B., Nottingham," in "Notes and Gleanings" on December 4th, also by Mr. H. S. Easty, and as the former says he would like the experience of others I gladly give mine. As most gardeners have to keep up a supply for salading purposes as long as possible the subject is of some importance. Although Endive, Chicory, Witloof, Dandelion, and Sorrel (when blanched) are reckoned as salad plants, Lettuces, as a rule, are always preferred to those plants. Although large numbers are planted here during the year the varieties are very limited. Several I have tried are not equal, from an all-round point of view, to some of the old standard varieties; nevertheless, any new variety, or old one either, with a good reputation will always be acceptable, particularly a well hearted one, either Cos or Cabbage, for use from the end of November to the end of March. Between those dates I find the most difficult time to obtain a good supply of well hearted Lettuce from outdoors. If the weather is favourable—that is, not above 10° of frost, and not too much wet or damp—a supply may be kept; but I have found 15° of frost damages full-grown Lettuce considerably; also, too much wet weather, with slight frosts, decays good hearted plants, and Lettuces without hearts are not much appreciated.

I have dug them up with good balls of earth in November, and placed them in unheated frames, and with all the care taken they have damped considerably. I have also covered them with straw, mats, and Pea haulm in the open ground, but the damp was too much for them to keep well after Christmas. The Pea haulm was the best of the three coverings; it is cleaner and lighter, but a fall of 12 inches of snow makes it bad for them. The best of all coverings for salad plants, such as Lettuce and Endive outdoors, is about 18 inches thick of bracken Fern (*Pteris aquilina*). It is clean and very light, and that thickness will keep out much frost. It is not, however, every gardener that lives within easy reach of a good supply of bracken, and I am one not lucky in that way; but I know that some are within easy reach of acres of this most useful covering, and to such it would be of great benefit, not only for Lettuces, but also for cold frames, Roses, and half-tender plants. The bracken should be cut in autumn before it is too dry and withered.

It must be understood that Lettuces to be well protected should have completed their growth, or made sufficient heart to fit them for the salad bowl before the end of November, as it is next to

impossible to secure much growth in December and January. In October and November also look out on all possible occasions when the plants are dry and tie them up, as it very much improves their eating qualities, whether the kind of Lettuce is self-folding or not. I had a very good supply of well-hearted Bath or Brown Cos through the month of December a few years ago by digging them up with good balls of earth attached, about a hundred plants that had been tied up when in a very dry condition in the middle of November. They were planted or laid in on the back border of a cold vinery, watering the earth about the roots as the planting proceeded, being careful not to let a drop fall on the foliage. The house being kept cool and dry, and the plants lifted with large balls of earth, they proved to be the most useful Lettuces I ever had through the month of December. If left on the border in the kitchen garden where they had been growing, the chances are that they would have been all spoilt with frost and damp, unless, as previously stated, I had a good supply of bracken. I hope that any gardeners who have a good supply of Lettuces through the three or four worst months of the year will give the benefit of their experience to the numerous readers of the Journal, with the best methods of culture and protection.

This matter is of considerable importance, as many families require salad daily in winter as well as the summer months, and it is not every gardener who can have a number of frost proof frames. The Broad-leaved Batavian Endive, well blanched, is the best substitute I know for Lettuce, but the latter is generally inquired after most. I should say that those having brick frames, with a flow and return hot-water pipe, in which early Potatoes are grown, with Melons for succession, would be suitable in which to sow Lettuce for use in December and January, after the Melons are cut in August. The hot-water pipes would dispel damp and promote a healthy growth. Any remarks from cultivators so situated I feel sure will be acceptable.

To maintain a supply of well hearted Lettuces from April to the end of November is easy enough, provided too much frost does not come before the date last named. For the earliest supply I sow thinly in beds about mid-August the two following, Hicks' Hardy White and Bath or Brown Cos. At the same time a good breadth of Lee's Immense Hardy Cabbage Lettuce, the sort mentioned by "J. B., Nottingham," is sown thinly in drills a foot apart, the plants to be thinned to 6 inches apart when large enough to handle. This sowing of Cabbage Lettuce, if the winter is not too severe, comes in at a most useful time to cut, before the Cos varieties are ready. Another sowing of the Cabbage variety is made at the beginning of September, thinning also to 6 inches apart when large enough. Last year this sowing proved the more useful of the two; a large number of the August sown plants were destroyed by frost and wet, as being more advanced in growth. I suppose their condition was such that they could not withstand the weather so well. Early in March a number of clean 6-inch pots were placed over the best plants, leaving the crock hole open, and in that way we had tender hearted Lettuce for use until the unprotected and tied Cos were ready the succeeding month.

One of the best summer Lettuces I find is All the Year Round, and although reputed hardy by some, I find it is not so, at all events in this district (midlands). Last year I sowed it in rows side by side with Lee's Immense Hardy Green at both sowings above stated, but 16° of frost completely destroyed it, while the last-named sort escaped almost uninjured.

I may state that both these sowings of Cabbage Lettuce were in open quarters. My opinion is that, provided the soil is of a moderately light texture and well drained, that plants are as hardy in the open quarters as near a south wall; at all events, that has been my experience. It is the full glare of the sun catching the plants so quickly on a south border after a night's frost that does the mischief. Some of the best Lettuces I have ever seen are grown by the London market gardeners, and, as a rule, they have no walls or south borders, but all open quarters. Two plantings are made from the mid-August sowings of the two Cos Lettuces named above. One planting is made in October of the strongest plants on well manured ground (for the Lettuce delights in a rich larder) in rows a foot apart, and about the same distance asunder in the rows. I usually plant about the same quantity of Hicks' as of the Brown Cos, but there is not much difference in their degree of hardiness. This planting, if all is well, is fit for use in May. Another planting is made from the same seed beds some time between the middle of February and middle of March, the weather and state of the land being the guide for this planting. These will follow those that were planted in October, and are fit for use in June. Both these forms of Cos Lettuce must be tied when three parts grown and perfectly dry. I find the best time for tying is late in the afternoon when the sun is off them, or has lost its power considerably, as if tied in the middle of the day when the

sun is powerful, as it often is in May, the results to the hearts of Lettuce are as bad as if tied when wet.

Throughout the summer I only grow two kinds—All the Year Round for a Cabbage, and Paris White Cos for an upright self-hearting Lettuce. Both these I have known and grown for many years, and if good strains of these two old favourites can be obtained they will not fail to give satisfaction from the end of May till October, if properly cultivated. The produce is all that can be desired for summer and early autumn use. The first sowing of Paris Cos for early summer use is made in a warm spot near a south wall from the middle to the end of February. The seeds are scattered thinly, so as to have the young plants as strong and sturdy as possible, and when large enough, and in favourable weather in April, to plant out in well prepared land in rows 15 inches apart, and 12 inches from plant to plant in the rows. If the weather is hot and dry at the time a few waterings may be necessary till the young plants are established. Showery weather is suitable, but the best results are not obtained if the soil is too wet at planting time. This bed will be fit to cut in June, and will succeed the autumn-sown Cos. Another sowing of Paris Cos should be made in the open in March, again in April, and at intervals of a fortnight from that time till the middle of July, planting out sufficient from these sowings when large enough to maintain a good supply throughout the summer. It is important not to plant closer than the distances named, as without sufficient air circulating about them the leaves are apt to become twisted, and do not self-fold well enough. I have seen them planted 12 inches by 9, and even closer, and have done the same myself; but the produce from such was not to be compared with those that had more room. If taken in a marketable sense, good solid Lettuce will generally sell at a profitable price; but small, twisted, light-weighting samples will scarcely sell at all, so that it is better to have one good one than six of poor quality. Also, if wider apart they do not bolt or seed so quickly.

It is also important that the Lettuce beds be not made under trees, also that the ground be hoed frequently, not only to destroy weeds, but to aerate the soil. It prevents excessive evaporation, but most persons who have had a few years' practical experience with kitchen gardening know the benefit of frequently hoeing between crops, even if there are no weeds to destroy. The Paris Cos is a good variety to maintain a supply till the end of September, after which time I prefer the Bath or Brown Cos. Of this, make two sowings, one the beginning of July, the other in the middle of the same month, and from these two sowings some good plants may be expected for October, November, and December. These must be planted the same distance as the Paris Cos, and when dry enough and large enough tied up. This variety, as far as my own eating is concerned, and I know it is the same as many others of the gardening craft, is one of the best in existence. There is a self-folding Brown Cos, but with me it has never come so fine; if a good strain can be had it is very useful for autumn and winter use.

Many people, and especially ladies, prefer good Cabbage to Cos Lettuce, and if only one sort is wanted for summer and autumn use All the Year Round will be found a good one. I never transplant Cabbage Lettuce, for seed is cheap, and an ounce will go a long way if sown thinly. If sown at all thick it is not only a waste of seed, but it makes more work to thin them, besides helping to spoil the crop. A good distance apart for this Lettuce to stand is a foot apart each way. Make the first sowing towards the end of February, again in March and April, from then every fortnight till the 1st of August, and a good supply of Cabbage Lettuce for some months will be the result. The first and last sowings may be on a south or west border, the others in the open. A very good position for Lettuce in June and July is on every alternate Celery ridge; the other ridge is best not planted, as the Celery can be watered and attended to with greater facility. Another good position is where the main crop of Scarlet Runners are sown. In March a quarter is cleared of old Cabbage stumps or autumn Broccoli. It is then well manured and dug up. In April marks are made 5 feet apart for the sowing of the Beans about the 1st of May. At the same time (in April) two rows of Paris Cos are planted down the centre between the 5-foot spaces, not less than a foot apart from the first sowing made in February. These will be half grown by the time the Beans are up, and fully grown and cleared off before the rows shade them much. I have had some large, well-hearted Lettuce from this planting.

If the summer should prove to be a dry one, a very good plan is to sow the Paris Cos thinly, and single out the plants immediately they are large enough to handle, but for all sowings and plantings an open position, plenty of manure, and digging a good spit deep at least with frequent hoeings, are essential to success. If these conditions are followed out the water pot will not be required much after planting. When waterings have to be resorted to, and the

water happens to be much colder than the soil, the plants wither very much in the succeeding hot sunshine. Manure well, and a Lettuce grows quickly, and the quicker it grows the more succulent its nature, a very essential point for one of the first of salad plants.

A few words should be said as to cutting Lettuce. As most gardeners are aware all vegetables in hot summer weather are best cut early in the day before the sun has much power, and although the dews are not so heavy as in autumn there is a certain dampness in the plants before breakfast time that makes them appear when cut very fresh and crisp. This particularly applies to Lettuce. Market gardeners do not cut, but generally pull the plants up by the roots, as their produce is often not retailed for a day or two after, and sometimes more, and when pulled does not wither so soon as when cut. It is advisable to cut all Lettuce for midday use before breakfast, and for night use as late as possible in the evening. When cut in the hot sunshine in the middle of the day they have a withered, dry, and tough appearance, and their taste correspondingly so. This refers mainly to the months of May, June, July, and August. If many are cut at once cover them with Rhubarb leaves till wanted.—A. HARDING.

HARDY FLOWER NOTES.

WITH the last month of the dying year we can expect but little brightness in the flower garden; even if there were nothing of interest we might, however, say with Shakespeare—

"No man inveigh against the withered flower,
But chide rough winter that the flower hath kill'd;
Not that devour'd, but that which doth devour,
Is worthy blame."

Grim winter, with his icy breath, has yet left us something to admire. It may be there is but little flower, but there is at least the foliage of many evergreen plants to study and enjoy. On a wall, it is true, we have the old Monthly Rose in flower; the little creamy white *Crocus ochroleucus* is in bloom in the border, some late *Chrysanthemums* are in flower outside, and about the usual number of spring flowers have anticipated their usual period; but after all it is to the foliage that we have to look for something to interest and to yield pleasure.

Among the many plants which thus present themselves to our observation the Saxifrages are perhaps the most interesting; they present so much variety of colour and of shading that in a good collection there is always much to study; bright greens, silvery greys, and glaucous greens present themselves in almost endless variety. I have a short walk leading from my house to the garden gate; this walk, until within the last few years, was edged with Box, and proved very unsatisfactory. The Box has been removed, the border edged with rough stones, behind which were planted Saxifrages, Sedums, Silenes, and other alpine plants; these are now fairly established and the stones almost covered, and the plants form irregular hillocks, which come partly over the walk, and by their irregularity of outline deprive the straight walk of the formality which so largely characterised it in former years. This edging is always of interest. In spring, summer, and autumn there is always something in bloom, and even now (December 9th) it is bright and attractive. For obvious reasons the choicest of the Saxifrages are not grown in this position, but such kinds as *S. pectinata*, *S. pyramidalis*, *S. intermedia*, and *S. rosularis* among the incrustated, and *S. hypnoides*, *S. Wallacei*, *S. Kingi*, *S. tenuifolia*, *S. lanceolata*, and *S. muscoides atro-purpurea*, with others of the mossy section, flourish and increase, and are at this season, especially when the weather is fine, of great value. These Saxifrages are far too much neglected in the arrangement of the garden for winter and, unlike many of the shrubs which are so frequently used for this purpose, they may be permanent occupants of the flower garden. I am glad to think that I am not called upon to say which section of the Saxifrages is best suited for this purpose. Almost all are worthy of a place, and I feel sure that they should enter more largely into our gardens.

There are also a few variegated leaved members of the genus which are especially worthy of mention. I must confess to having become a comparatively recent convert to the use of variegated leaved plants. Even yet there are some I care little for, but I have been forced to the conclusion that the careful use of these forms will add much to the beauty and interest of the garden. I would, therefore, speak briefly of three Saxifrages which should be obtained where possible. The first is unfortunately somewhat expensive—a circumstance which is perhaps a recommendation to some—but is well worth growing. It is *S. Guthriana variegata*, a very neat compact variety of the Umbrosa section, beautifully variegated, with creamy yellow and green. The next is the varie-

gated form of *S. umbrosa*, the London Pride. This is a cheap plant, and it is surprising that it is so seldom seen. It is beautifully blotched with white, and a large rosette forms a very pretty object. To see the London Pride in perfection a rosette should be planted singly, with plenty of room to develop in, and in rich soil. Thus grown it will attain dimensions which will surprise most of those who see it. The only other variegated Saxifrage I know of, but which I have not seen but hope to add to my collection in spring, is *S. hypnoides argenteo-variegata*, one of the mossy section. This variety is described as having the foliage elegantly margined white. Although I have not seen this, I feel sure, from the reputation of the firms sending it out, that it will be a valuable addition. It will probably require some attention to keep the stronger green shoots from choking the variegated.

One could say much about some of the beautiful encrusted Saxifrages, but space will not permit at this time, and I must pass on to speak of other plants. While on the subject of variegated plants the Arabises must not be forgotten. Of the three varieties I know—*A. albida variegata*, *A. lucida variegata*, and *A. procurrens variegata*—I must confess to preferring the first, especially where it is desired for hanging over stones. The variegated form of *lucida* is duller in colour and more formal in outline, while the other, when in good condition, is much brighter and clearer in colour, and has to my mind a great attraction from what one may be pardoned for calling an "unstudied" habit of growth. It should, however, be grown in an open place, and any tendency to revert to the original colour should be prevented by pinching off the green shoots as they appear. A large plant belonging to a neighbour who kindly gave me my first plant has now reverted entirely to the original green colour, while mine are as fine as ever. I have not yet been able to appreciate the variegated *Alyssum*, *A. saxatile variegatum*, or the *Aubrietia*, *A. purpurea variegata*, but this appreciation may come in time.

Very valuable are some of the *Euonymuses*, such as *E. radicans argenteo-marginatus* and *E. r. aureo-marginatus*. The *Aucuba-leaved Daisy* is not very satisfactory with me, but is attractive where it does well. Some of the silvery leaved plants which are pretty in summer, present few attractions in winter. *Antennaria tomentosa* may be named as one of these. This cannot be said of *Santolina incana*, a dwarf shrubby plant, which is very conspicuous at this season. It will be found better to raise a stock of this every two years, as the older plants often become a little unsightly. It grows very readily from cuttings.

Glaucous-leaved plants are very useful at this time. Old plants of *Carnations* look well where they stand from year to year, but the *Pinks* are much finer for winter decoration. The old white variety is as good as any of the garden forms, but the neatest are some of the *Alpine Pinks*. One plant I have which crowns a projecting knoll of rockwork, built to check a current of wind, is particularly fine. It is nearly 2½ feet across, and is a hillock of spiny glaucous foliage. It is greatly admired, and time after time do I stop to enjoy its beauty. *Asphodelus luteus* will also be found very attractive, with its grass-like glaucous green leaves.

But my pen could run on long enough without exhausting the subject or dealing adequately with the many plants which lend brightness to the scene. To-morrow when I again look out many will silently reproach me for forgetting them. *Ericas*, *Sempervivums*, *Sedums*, *Thymes*, *Cotoneasters*, *Aubrietias*, and others are mute yet eloquent witnesses to the truth that the lover of hardy plants can enjoy in gloomy December a feast of beauty, which is none the less welcome when accompanied by the knowledge that many bulbs are beginning to peep above the soil, and are thus preparing to yield him that pleasure which they can so well bestow.

But while looking forward hopefully to the time when—

"Fair handed Spring unbosoms every grace,"

let us not forget the graces of winter—the brilliant mounds of green, of grey, and of parti-colour, which brighten our gardens and are the "silver lining" of the cloud which the short days inevitably lay upon us.—S. ARNOTT.

ONIONS.

I ADDED several new varieties to my usual stock of Onion seed at sowing time, and amongst them I found Laxton's Concord superior to his Sandy Prize, but by no means so true. It will require selection, but the most globular type is certainly a handsome heavy Onion, and superior to any kind I have hitherto tried. I have selected a few, and shall save the seed, and after a year or two no doubt shall have a good and level stock. My practice is always to save the deepest in flesh, for I prefer that to great cir-

cumference, and by thus saving the thickest I have now obtained a stock of Rousham Park, which is considerably heavier than the usual sample. This is a flat Onion certainly, but large, thick, and heavy, and only second to a careful selection that I have made of Improved Anglo-Spanish, which is globular. These two Onions are my sheet anchor, but I shall certainly grow the seed from my selected Concord. Sandy Prize grew large, but it is a flat Onion, and I have discarded flat Onions with the above exception. Southport Globe, which I received from New York, did not satisfy me, and I shall not grow it again. The large flat Onions that are the pride of the exhibitor are of little household use, and, as a rule, are bad keepers to boot, a medium-sized, thick, heavy, close-grained bulb being what is required by the cook, and these will not begin to grow in such a hurry as the monsters. When Onions are exhibited I think weight ought to be stated, and weight ought to be the principal point in determining their position. It is so at some places, but at others circumference seems the acme of perfection, and weightier but less imposing looking bulbs are passed by.

My practice when I lived elsewhere, where the soil was extremely light and gravelly, was to sow seed the first week in February, weather permitting, and I found I did not succeed if I failed to sow during that month. I attempted the same plan two years in succession here on my heavy soil, but failed to get a plant each time, although I had used burnt earth both to mix with the soil and to cover the seed. The middle of March I find quite early enough, and although they seem to grow slowly for a long time they pull up wonderfully in July.

It is sometimes hard work to ripen the bulbs in showery autumns, but where the practice of a cottager hereabouts can be followed there will not be much difficulty. He has driven hooks in rows all up the south side of his cottage, and after pulling his crop, and tying them in bunches, he hangs them on the hooks, where they never fail to ripen.—H. S. EASTY.

DRACÆNA LINDENI.

THIS is one of the most useful foliage plants that has been introduced during recent years. It lasts a considerable time in rooms without injury, and will bear the temperature and conditions of the conservatory from April until October, or longer if the temperature of that structure does not fall below 50°. Although it will bear for a long time shady positions in rooms and in the conservatory, it does much better and lasts longer where a fairly light position can be accorded it. Highly coloured specimens are handsome, but poorly coloured ones are ordinary in appearance, and in this condition the plant has not much to recommend it. Success in having the plants a good colour or the reverse depends solely upon the treatment they receive. Many have been unsuccessful in this respect through growing the plant in too warm a temperature. In a close stove the plant either becomes green or a sickly yellow, and is destitute of those beautiful markings which render it so conspicuous. Plants that are in this condition will, if removed to a lower temperature, soon develop coloured leaves. An intermediate temperature appears to suit it best, although it does not grow so rapidly as under stove treatment. This does not matter materially as long as well coloured examples can be produced, for if once they are developed they last a considerable time, and in light sunny positions in rooms we have known them grow and improve. Plants that were taken into the dwelling house in June are still there, and will last for some months longer in a presentable condition, when they will be cut up for stock.

This *Dracæna* does not require to be fully exposed to the sun, but it is by no means particular to the amount of shade. The temperature appears to be the main factor of importance, whether the foliage colours or not. Even if heavily shaded in a moderately low temperature it colours well. We have this season discovered that it is at home even in a late vinery where the foliage was moderately thin and air was admitted liberally. To develop fine specimens they should never have insufficient root room from the time heads or cuttings are rooted. Pot them from time to time, until they are placed into 10-inch pots, if large well developed plants are needed. This size is none too large, although the plant can effectively be used for decoration in any size down to 2-inch pots. We have found it succeed admirably when potted firmly in a compost of fibry loam, sand, and one-seventh of decayed manure.

It has been said that this *Dracæna* can be propagated too slowly to be used for general purposes of decoration, and this is true if one system, and a general one, only is practised. After taking off the head, which sometimes flowers after the plants have been root-bound and checked to wait for side shoots, which are produced one by one at intervals of time, is too slow. A quicker way is to cut up the stem into lengths of about 3 inches, and insert them singly

in small pots with sand at the base, and plunge them in bottom heat. These soon break into growth, and when large enough the young should be taken off and re-rooted. By this means numbers are produced in little more time than one or two would be secured from the stem when allowed to break from the top in a natural manner. Plants of this nature when they bear conservatory treatment during the summer are invaluable in assisting to change the character of that structure.—O. A.



ODONTOGLOSSUM URO-SKINNERI.

THE "Orchid Album," published by Messrs. B. S. Williams, Upper Holloway, has now reached part 105, including 420 coloured plates of the best and most interesting Orchids in cultivation, forming quite an Orchid library. In the present number plates and descriptions are devoted to *Odontoglossum Uro-Skinneri*, the beautiful hybrids *Cypripediums Marshallianum* and *œnanthum superbum*, and the showy *Dendrobium chrysotis*, with its heavily fringed lip like *D. Brymerianum*.

The illustration of *Odontoglossum Uro-Skinneri* represents an uncommonly fine variety, the sepals and petals heavily barred with brown on a green ground; the lip heart shaped, with an undulated margin, bright rose with white streaks. The raceme is a long one, and most effective. The following particulars are extracted from the notice accompanying the plate.

"The typical species was found by Mr. George Ure Skinner, whose name it commemorates, near the village of Santa Catarina, in the district of Solola, which is nearly a hundred miles distant from the City of Guatemala; but the plant here figured is a much finer variety than the one taken for illustration by Mr. Bateman in his monograph of the genus *Odontoglossum*; indeed, we cannot but think that the appellation of *splendens* is really deserved by this variety. It would seem that the plant first flowered in the establishment of Messrs. Veitch & Sons of Chelsea about the year 1859, and some discussion took place about its being a hybrid; but Mr. Skinner was strongly opposed to this theory, and he writes thus:—'I may be allowed to satisfy you that this is no hybrid; it is a very distinct species, which I found growing on rocks near the village of Santa Catarina;' and he further adds, 'it proves a very bad plant to get over alive, but in several attempts a few survived. We suspect, however, that in the days when Mr. Skinner wrote these lines the means of transit were much slower than at the present time, and the style of packing was not so well understood as it is to-day; there is consequently far less risk than formerly in the transit to England. We wish someone would put this to the test now in the case of *Odontoglossum Uro-Skinneri*, as the plant is becoming somewhat scarce in cultivation. It is a noble large-growing kind, and we have seen it growing luxuriantly in the collection of H. J. Buchan, Esq., Wilton House, Southampton. Here, too, we saw the first seedling *Odontoglossums* which had been raised in this country; they had been obtained from this species without any efforts at hybridisation, and were growing and doing well.

"The grand variety here figured was grown in the fine collection of E. Salt, Esq., Ferniehurst, Shipley, Leeds, and is another fine record to add to the many superb varieties which have flowered in that establishment, and we are much indebted to him for the opportunity of figuring it in the pages of the 'Album.' It blooms in the autumn months, and lasts a long time in full beauty.

"*Odontoglossum Uro-Skinneri* is a bold-growing evergreen plant, making large flat pseudo-bulbs, which spring from a creeping rhizome. The leaves are ovate-lanceolate, firm, and of good substance; the ground colour of the sepals and petals is very variable;

indeed, this has been noted from the time of its first introduction. Mr. Skinner said of it 'that it varied in almost every plant;' but although during the past thirty years we have seen many plants in flower, not one to approach the beauty of the one here figured has appeared. The colouring of the sepals and petals is for the most part of a pale green, marked over the surface with brown blotches, or of a dull brown, mottled more or less with green, and the lip white, dotted all over with blue or pale rose with white markings, and not the rich rose and chestnut brown of this illustration. The present plant is evidently a near ally of *O. biconense*, but Mr. Skinner points out the difference in the two species. He says, '*O. biconense* has oblong narrow bulbs and leaves, and no rhizome, but massed and always terrestrial, half buried in mossy banks.' Our present plant has large and flat bulbs, and a running rhizome; but we think that the conditions under which Mr. Skinner found it—*ie.*, on rocks—are too often lost sight of by our Orchid growers. We have frequently observed this plant to be very much over-potted, and in consequence thriving indifferently, therefore bear in mind our advice and do not overburden the roots with soil, which is the great stumblingblock, especially to young amateur growers. Drain the pots carefully and well, and use for soil about half good peat fibre, from which all the fine mould has been well shaken, and some chopped sphagnum moss; mix the whole together with some medium-sized nodules of charcoal, and in potting add here and there a slight dash of sharp gritty silver sand, pressing the whole down very firmly. At this the dull season of the year water sparingly, but keep the plant moist, and at the turn of the season, when the days lengthen and the sun brightens, more may be given,

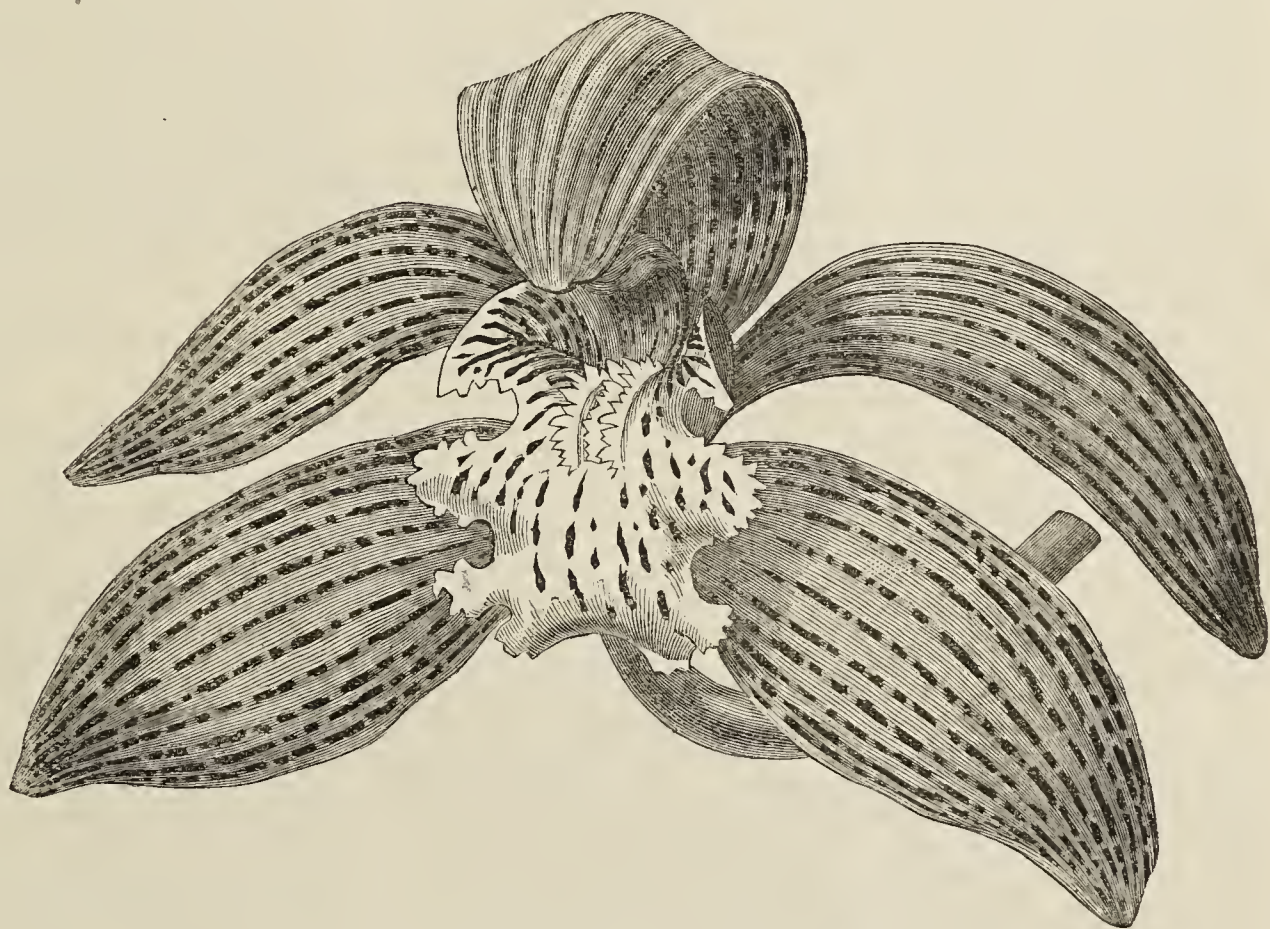


FIG. 71.—CYMBIDIUM TRACYANUM.

until in the summer season it may be treated in the same manner as the beautiful *O. crispum* (Alexandræ), which we all love so well."

CYMBIDIUM TRACYANUM.

At the meeting of the Royal Horticultural Society on December 9th Mr. H. A. Tracy of Amyard Park Road, Twickenham, exhibited a vigorous and handsome *Cymbidium*, for which the Orchid Committee awarded a first class certificate. Doubts were freely expressed, however, with regard to its being a true species. One experienced orchidist considered it as "a form of *C. longifolium*," another dubbed it as "merely a fine *C. giganteum*," a third authority fancied he could discover "a nearer relationship to *C. Hookerianum* in the form, size, and markings of the lip." It is quite plain from these different opinions that the plant was not a readily recognised form of any well known type, and it was admittedly distinct if only as a variety, while it was unquestionably handsome. In the growth and foliage with the smooth stem or leaf bases it resembles *C. longifolium* or *giganteum*, but the flowers are of great size, 5 inches or more in diameter, with broad sepals and petals evenly and strongly veined or spotted in lines of a

reddish tint on a yellow ground. The lip is long and broad, pale yellow spotted with red. The raceme was about 4 feet long, bearing numerous flowers.

MAKING USELESS PEAR TREES USEFUL.

I READ with much interest your leading article in the Journal of November 17th on the above subject, and it is a very important one to which unfortunately far too little attention is paid generally. The failure in obtaining crops of fruit on many Pear trees will remain until far more attention is paid to the adaptability of sorts to situations, and the prevention of too free a growth. With too many persons an idea prevails that any varieties of Pear trees, purchased at sales by auction, and whether there or from nurseries, at the cheapest possible price, are suitable, and that it is only to plant to procure fruit.

In the favourable districts of England many Pears produce good crops of fruit, when it is almost impossible to get crops in the smoky districts of large manufacturing centres; and in these last named places where gardening is so difficult under the many existing disadvantages, there is frequently a great desire to battle with these difficulties, and to secure good crops of fruit. Much valuable information is to be gleaned from the article referred to, and it will be well if amateurs who wish to grow fruit well will study what is recommended by Mr. Smith.

The immediate neighbourhood of Birmingham is pretty well known as not being one of the best for gardening generally, and the Edgbaston district has a very large number of excellent gardening establishments, with an immense area of glass throughout those gardens, and Birmingham holds its own as a plant growing district, and high class cultivation is the rule. But our springs and autumns are often sunless and moist, and outdoor fruit crops of Apples, Pears, Plums, Cherries, Damsons, Filberts, &c., are most uncertain, from the non-enjoyment of a clearer atmosphere and other necessary adjuncts to successful outdoor gardening. When at the Botanic Gardens towards the end of November Mr. Latham, the Curator, showed me some excellent examples of two varieties of Pears—Beurré Diel and Doyenné du Comice, grown by F. M. Mole, Esq., in his garden in the Westfield Road, Edgbaston, within a mile and a half of the centre of Birmingham. In a correspondence since with that gentleman I found that his views as to the treatment of Pear trees was very much in unison with Mr. Smith's. I have since had an opportunity of inspecting his garden, and he has kindly given me his views in writing, which I have pleasure in giving below. Fruit growing in the immediate district of this great city is, as I have already said, most difficult, that is, to secure crops of really good fruit. Mr. Mole has made a study of the matter, and is a follower of the teaching of Mr. Rivers, Mr. J. Wright, and other safe authorities, but he acts also from his own, in some cases dearly bought experience, from buying in sorts which have been recommended, and after seasons of waiting have had to be rooted out, as too uncertain in cropping, or worthless. His garden all round is a marked example of first-class culture, and his Pear trees, especially on the walls, show they have received great attention. They are well trained, not overcrowded with spurs, but make clean good growth.

Mr. Mole pays particular attention to the summer pruning of the trees, removing what wood is not required, and laying in any new wood he wishes to retain. He always makes a point of thinning out his fruit as early as it can be done with safety, so as to secure a moderate crop of fine fruit rather than a larger quantity of inferior size and quality, and in removing any foliage which may cover the fruit to ensure full exposure to the sun. As flowers are grown on the borders, a little artificial manure is given when the border is forked over for planting out in June. If any trees grow too luxuriantly Mr. Mole adopts root-pruning, also the greatest care is taken in training the trees and thinning out flower buds when a heavy bloom is showing, and his treatment clearly shows that with good attention, and adopting proper methods, good fruit can be obtained even under very adverse circumstances.

The following are Mr. Mole's observations which I have referred to.—

"After twenty years' experience my opinion is that it is useless to attempt growing Pears in this neighbourhood on pyramids. A good bloom may be had occasionally, but this, as a rule, is destroyed by frost or ungenial weather, and even when a few Pears do set the chances are that the season will not be good enough to ripen them. If you have a sheltered garden and wish to try pyramid Pears, then Williams' Bon Chrétien is the only one worth planting, and under favourable circumstances the fruit from this, when you get it, will be very good.

"A south wall is the best, and for this I should recommend Beurré Diel and Doyenné du Comice. The former is an excellent

bearer, grows large fruit, and is a very good eating Pear. The latter is superior, the finest Pear I have grown, but it is much more shy in bearing than Beurré Diel. Durendeu succeeds, and Marie Louise I should also have. The latter will do, though not quite so well, on an east or west wall, and on such walls you can also plant Souvenir du Congrès and Jargonelle. Those named are ample and better than more, unless it is wished to grow a variety for experiment as I have done, and I could give a long list of Pears I have tried and thrown away after years of perseverance with them; good varieties, no doubt, in some parts, but useless here.

"I should have the Pear trees upright trained, as in No. 4 sketch in Rivers' catalogue, as by these you could cover the wall quicker, and as you can grow four trees where you would put one horizontal trained, there is a better chance of having fruit. Single cordons are also recommended, but I have not tried them; they, perhaps, have the advantage of being easier to manage.

"As to Apples for cooking these will do well as pyramids or bushes, and Lord Suffield, Ecklinville Seedling, and Cellini are what I should recommend, three sorts being ample. There may be many others equally good, but the above I know succeed. For dessert I must say the same as for trying Pears on pyramids. You may grow them to look at if you like, and this may satisfy some, but they are not, as a rule, worth anything for eating, being deficient in richness and flavour, therefore, I say, keep your pyramids for kitchen Apples. If a portion of a south wall can be given up two dessert Apples might be tried—American Mother and Cox's Orange Pippin (upright trained or single cordons), both excellent Apples for dessert when they come to perfection, which they probably would on a south wall.

"I need hardly say that success cannot be expected without giving care and regular attention to the trees in training, summer and autumn pruning, syringing, careful examination for destructive insects, and root-pruning when this is desirable. But it is a very pleasurable occupation, and one not difficult to acquire a knowledge of to anyone taking a personal interest in such matters, and looking after the trees themselves. My knowledge was gained in the first instance by reading 'Rivers' Miniature Fruit Garden.'—W. D.

THE ORIGIN OF THE FLORIST'S CHRYS- ANTHEMUM.

[A Paper by the late Mr. Shirley Hibberd, read at the Centenary Conference of the National Chrysanthemum Society, November 11th, 1890.]

(Continued from page 521.)

IN our observations of garden favourites we learn that variation is subject to laws of which we know at least something, though it is but little considering the vastness of the subject. One thing we know, that the great law of like begetting like holds good here as in the rest of creation. Yet even in the most extravagant departure from types the law is illustrated, for when we can trace new forms to their parentage we find they represent their origin fairly enough, though perhaps in a way we could never have predicated. When the waggish soldiers at Scutari grafted the tails of rats on the snouts of other rats, and so got up a new species which they called the truncated or proboscis rat, they were not much more extravagant than the florists, only less honest, for the thing was a cheat, but a florist's flower, however far removed from its natural prototype, is a reality of Nature, and like the truncated rat when examined, reveals its origin. You see the variations of the Chrysanthemum are accomplishments of Nature in the first instance, but they represent the taste, fancy, or fanaticism—call it what you will—of man, because he takes pains to divert Nature from her wonted course, and as regards results will keep and perpetuate only what pleases him; and one consequence of this is that with all our wide range and great number of varieties, we do not possess all the materials needful to the inquiries before us, for in fact man would be sure to destroy the best evidences, which would be the varieties differing but little from the original types, and probably he would preserve nothing until he had obtained some very great remove between which and the type the connecting links were lost.

We have to make the best of the case as it stands. It may be said at starting that as regards form the flower presents fewer difficulties than as regard size and colour. The ray florets are drawn out to an extravagant length in the Spiderkry and the disk is contracted proportionately. It is the parallel of our elastic cord that served for an illustration of identity. The foundation of every group was imported. But the European cultivators have enlarged the groups and greatly improved the forms, and I use the term "improved" in full consciousness of all that it implies. But please observe how the florists have been working with Nature, and I may say under her dictation, without exactly knowing it. The incurved flower when perfect is absolutely sterile. In a cold climate this is possible, for cold causes the florets to curve inward, and suppresses

the organs of reproduction, so that ligulate and incurving florets are alone produced, and to expect seeds from such perfect florets is as vain as to look for lunar caustic in moonbeams. But warmth causes the florets to reflect or to curve outwards, and it favours the retention in the centre of the flower or capitule of a few tubular florets, and thus while in a warm climate it is impossible to grow the incurved varieties to perfection, the Japanese varieties attain to fine proportions, and to secure seed it is not only possible but easy. I know that seed can be produced, and has often been produced in this country, but you must permit me to deal with this subject in this broad manner or my story will have no end, unless, indeed, it makes an end of me. But observe that in the British Islands and the north of France, Belgium, and Holland, the incurved Chrysanthemums are well grown, and have much beauty, but in the south of France, and generally in the United States, the summers are too hot for them, and the more fantastic kinds that refuse to incurve with geometrical precision are the favourites, and the production of seed presents no special difficulty. Thus the favourites of the several countries have been determined by Nature much more than by man. A man may have longings for something he can obtain, but the regard that comes of familiarity is impossible. The longing for a rarity is very different to the love of a homely toy, and our intense admiration of the incurved flowers is in great part the consequence of the fact that our circumstances enable us to grow it to a high perfection.

The variations of colour are of great importance. There are but two colours in our flower, yellow and purple. Of white I say nothing, for it is simply the absence of colour; of yellow I will say that the Chrysanthemum attains to perfection of colour in yellow only, for in such a flower as *Jardin des Plantes* we have the purest yellow, and the colour is such as the artist would regard as perfect impasto, or a French florist might say "well ground in." You will say we have red, crimson, lilac, mauve, and so forth. I say these are all variations of purple, or they are mixtures caused by the intrusion of yellow, as in the colours we call orange, chestnut, and golden bronze. Upon the blue tone that is the basis of purple disappearing, the yellow steps in, and then we have brown, or bronze, in place of purple, but equally an impure secondary or tertiary colour, often very beautiful, and more so by association with its own green leaves. These do more for colours than we know of until the leaves are removed, and the flowers are put in bunches of one colour to look like Cauliflowers that have been dipped in a dye vat, and then are very gay, though destitute of beauty. And this purple, be it observed, is not well ground in. It is, in fact, not properly skin deep, and is rather a discolouration than a proper colour, for it belongs to the upper face of the florets, which on the under side are white, which causes the silvery turn-over of the incurved, and the curious gleamings of light in other varieties that show the under sides of their florets. I like the manner in which Mr. Norman Davis, in his paper on "Sports" read last year, speaks of these colours as "reflective." When a good distinctive term like this is proposed I make it a rule to adopt it, to prevent the manufacture of another, and the evils of collision that may ensue. He calls the purple tones reflective because they are not properly integral, and you may illustrate this by comparing the florets of a yellow variety with those of any other colour. There is no white underside in the yellow flower; the colour is integral, and it is the only colour that is so; all the others are superficial or reflective, and they illustrate the law of compensation in colours, for the purple is the complementary of yellow, and just the variation a yellow flower should aim at to keep within the limits of chromatic respectability. The law that appears to govern sports is one that affords direct hints of the origin of the Chrysanthemum. Mr. Norman Davis, arguing from the white basis of the rose and purple flowers, and the frequent occurrence of white flowers both in seedlings and sports, expresses his belief that the flower was originally white, and the supposition illustrates a remark by Mr. Burbidge, in his paper read last year at Chiswick, that our favourite is a kind of glorified Ox-eye Daisy endeavouring to become a tree. Madame Desgrange may be taken as an example of many instances. The original is white, and when immature it has a yellowish centre. If carefully examined it will be seen that this colour is akin to the green tint that occasionally appears in the centre of Lord of the Isles and other varieties while the flowers are young and disappears as they open out. But, however we may explain the yellow tint in the centre of Madame Desgrange, it certainly gives a hint of a kind of desire in the flower to become yellow, and this desire is gratified in *G. Wermig*. In like manner Lady Selborne has given a yellow sport; Beverley, Empress of India, Queen of England, Mrs. G. Rundle, White Globe, White Trevenna, White Cedo, and Snowdrop—to mention only a few out of many—have in like manner sported from white or blush to yellow; but there is, on the other hand, no instance of a decided

sport of a yellow to a white. Yellow flowers give deeper toned and bronzy sports, as, for example, Golden Annie Salter becomes Orange Annie Salter, the pure Yellow *Jardin* sports to Bronze *Jardin*; the white grounds are capable of anything known in the way of sports, for although we know of no sport from white to marone or chestnut, yet as the crimson is a reflective colour on a yellow ground, the white may first produce a yellow, and that may evolve the tone of red required for the chestnut. That sports have occurred most frequently in the incurved group is a fact demanding consideration. Is it because these are the farthest removed in form and constitution from the original type? or is it that, having been the most carefully cultivated and the most closely observed during a run of fifty or more years, the minutest variations of these have obtained skilled attention, while sports in other branches of the family have often passed unheeded to oblivion, in some cases not having been seen at all, and in many not cared for? It is impossible to answer these questions, but they are pertinent to the business before us, for the incurved flowers are in the most helpless condition of any of their family through complete sterilisation, and as they cast the burden of increasing their mere number on the cultivator, they take to a sportive habit to make amends for incapacity to vary through the agency of seeds? I offer these suggestions in all seriousness, for while we do not allow that plants possess volition, we are bound to assume that they possess it when endeavouring to sum up in brief the collective result of a complication of influences and circumstances. When we say that a garden flower casts upon its owner the charge of perpetuating it, that is like stating in the concrete that as cultivation renders it less fertile and less hardy, it must cease to exist as a subject for the florist unless assisted by the art that has shaped its form in a manner antagonistic to its welfare.

Passing from the comparatively trivial characters derived from colour, let us look a little closer into the plant. The small wiry Liliputians differ by many degrees from the large incurved varieties, and these again from the Japanese. The smaller kinds have thin much-cut leaves and small flower-heads of a chaffy texture, the florets very closely set, and the capitules as round as buttons. Seedlings of these produce a large proportion of yellow flowers, and often we find amongst them copies of the wild Chrysanthemum indicum so nearly identical with specimens obtained from China and India that cultivation appears scarcely to have changed it. The speculative cultivator must often have asked himself the question, Is it possible to obtain from any of these a proper incurved or Japanese variety? and after taxing his memory for the results of his own observations, and of reports current on the origination of well-known varieties, he would give a negative reply and dismiss the matter with the epithet, "impossible." But this Chrysanthemum indicum is the reputed parent of all our varieties, and there has been some robust faith shown in its pliability, or perhaps the declaration having been made at hazard has been accepted by one part of mankind for lack of a better explanation, and by another part in accordance with the schoolboy doctrine, that whatever is seen in print must be true.

But we have not been without witness to an explanation, possibly better. In 1792 Ramatuelle, in "Journal d'Histoire Naturelle," vol. ii., page 240, described the old purple Kiku, that was afterwards figured in the "Botanical Magazine," declared it to be distinct from the Linnaean *C. indicum*, and named it *Chrysanthemum morifolium*, the Mulberry-leaved Chrysanthemum—a quite appropriate name, for the leaf, especially as figured in B. M. 327, bears a striking resemblance in general outline to the leaf of the white Mulberry. At the Chiswick Conference Mr. W. B. Hemsley, F.R.S., directed attention to this point, and illustrated it by specimens recently collected by Dr. Henry in Central China. There is a slender form of the plant named *gracile*, and Mr. Hemsley named the plant obtained by Dr. Henry *vestitum*. He has since cancelled *vestitum*, and has assigned *gracile* a place as a slender variety of *C. morifolium*. This slender plant is found in North-west China, and its characters appear prominently in what we know as Chinese Chrysanthemums, more particularly those of the incurved and reflexed groups. The typical *C. morifolium* appears to show itself plainly in the Japanese group, the leaves of which are thicker and more downy, and the involucre bracts are often clothed with a fine pubescence. Maximowicz describes a plant as *morifolium* that cannot be accepted as such, and in respect of which there is not enough known to enable us to speculate upon it. But it appears that Dr. Henry has found the true *morifolium*, and that it answers admirably for a place in our charmed circle. The plant is robust, with thick leathery leaves, very variable in shape and degree of cutting, and clothed with a grey tomentum.

The case then stands thus as the result of the inquiry, that Liliputians and Pompons are garden forms of *Chrysanthemum indicum*, while the whole of the larger kinds (reflexed, incurved, and Japanese) are garden forms of *Chrysanthemum sinense* (syn.

C. morifolium), the first two groups being descended from the variety *gracile*, the third from the true *sinense*, the most robust of all.

It must be observed here that the flower has certainly been cultivated in China three thousand years, and probably five thousand years, and we are absolutely without record of the manner in which the Chinese obtained it, but the actual vegetation of to-day in that country suggests the explanations that have been offered. Now, it must be admitted that the two reputed species, *indicum* and *sinense*, though for botanical purposes distinct, are so nearly related that the speculative mind is inevitably carried back to the time when one species became two through the influence of circumstances. The weaker *indicum* may have produced in travelling south the stronger *sinense*, but it is more likely that the stronger *sinense* in travelling north degenerated to *indicum*, and that a yellow flowered form proved itself the most capable of withstanding unfavourable influences; that, in fact, we have here a striking example of the survival of the fittest. Another separation gives us the *sinense* in a weaker form, bearing the name *gracile*, and thus we have three possible parental forms to generate the three great families—the Pompons, the incurved, and the Japanese, and they thus stand in proper order as to relative vigour and the magnitude of their several parts.

This view of the case establishes the unity afar off, of the three forms now known as occurring wild in China. We are to regard them as three forms of a species that as such no longer exists, having split up into these three sub-species or varieties. Call them what you will, the botanist must begin somewhere, and if he insists on calling them species, there is no reason in the world why we, who view things so differently should dispute with him. But even now the matter is not absolutely settled, for I am bound to return to the primary proposition and speak to that before I conclude.

You propose to me to declare the origin of the Florists' Chrysanthemum. Now the Pompon forms are not florists' Chrysanthemums. The Japanese are perhaps, the incurved certainly are, and for present purposes I declare this group to be Chrysanthemum *sinense*. If you ask in what, as regards origin, the incurved differ from the Japanese, I answer, The first are from the slender plant that is found in north-western China, and the Japanese represent the stouter plant that is found in the warmer zone. Here, then, in the original geography of the species we seem to have an explanation of the reason why our best reflexed and incurved varieties are so well adapted for cultivation in this country and in northern Europe generally, while the Japanese are more at home in the south, and with us are less hardy than the others. The first and hardiest group represent the north-western *gracile* form of *C. sinense*; the more vigorous and less hardy Japanese represent the true *morifolium* or Central China form of *C. sinense*; and thus we establish our florists' Chrysanthemum as of pure descent, its innumerable varieties being of its own making, and all of them being descendants of a white-rayed flower capable of sporting to yellow, and by reflective sports producing all shades of colour while avoiding the two primaries, pure red and true blue. That we shall ever have these colours is quite unlikely, and if the theory of the flower now presented is a sound one, it may be said in a word that to hope for red or blue is but a forlorn hope, and may with advantage be abandoned.

BRIGHTNESS IN WINTER.

Now that Chrysanthemums, which so well relieve the gloom of November and early December, are practically over, what are their most varied, bright, and lively successors in the floral world? Are they not Zonal Pelargoniums? We know what is the answer of at least one who has done so much to improve and popularise these flowers—namely, "Come and See." I have for the first time been to see Mr. Cannell's Zonal Pelargoniums in winter, and they have placed me in a rather difficult position. If I were to fully and faithfully record my impressions they would be suggestive of exaggeration, whereas I know how incapable I am of representing the collection fairly, and doing justice to the claims of the several varieties now at the zenith of their beauty. It may be that many gardens have been overdone with the bright masses of Pelargoniums in summer, when relief from their fiery glare is refreshing, but in winter the case is different. "Warm" colours then are instinctively sought for, and they are provided in Zonal Pelargoniums. But all the varieties are not dazzling, for there are whites and neutral tints which in themselves are charming, and which enhance by contrast the brilliancy of glossy scarlets, glowing crimsons, and rich magentas, with which they are associated.

Until seeing the Swanley collection on a sharp winter's day, with snow covering the ground a foot deep, and driving in wild eddies everywhere giving one the shivers, I had no idea that the

plants in question were capable of such development in the dull season of the year. When stepping from the snow into one of the Pelargonium houses it was a veritable transformation scene. We have startling and dazzling changes in Christmas pantomimes, but not one has been produced to equal that just mentioned, and it was somewhat of a pity one of the great "spectacular" artists was not there that day to take a lesson from Mr. Cannell. The winter was forgotten in a moment, the shivers vanished, and all was warmth and beauty, more gladdening than could be produced by flowers on a summer's day.

Winter is the time for appreciating the full beauty of Zonal Pelargoniums without a doubt when revealed as at Swanley. But for producing such an effect as is there displayed three conditions are requisite—namely, good varieties, good culture, and good houses. A combination of these three "goods" gives a grand result. Good varieties consist of stout sturdy growers, which when justice is done to them throw up flower stalks like pipe stems, and bear heads of bloom like Hydrangeas. Good culture consists in growing the plants generously throughout their career in the fullest light when under glass in spring, and in the open air through the summer, giving nourishing stimulants judiciously for the production of thick leaves, which store flower-forming matter in the stems, and keeping it there by the suppression of buds till the time arrives for placing the plants under glass in the autumn. Good houses are those in which there is the least obstruction to light, every ray of which is needed in winter, and in which a temperature of from 50° to 55° or 60° can be easily maintained in severe weather.

It may be assumed that practically all gardeners can grow the plants, as can many amateurs, while the inexperienced who desire to do so can soon learn, as there is neither difficulty nor mystery in the matter, and they can mostly contrive to secure plants; but all who grow them do not succeed in producing the grand winter display that was expected. The varieties are then blamed, or perhaps writers are for overpraising them; but the fault is not there, for the sufficient reason that the best are so good that they cannot be overpraised. When the plants are well grown through the summer on the lines suggested and fail to flower satisfactorily in winter the misfortune is directly traceable to an insufficiency of light or warmth, or both, for continuing the growth steadily and sturdily. When the conditions are such as to insure this flowers are bound to follow. The plants have been trying to flower for months, but were prevented by the removal of the buds; but at last they are afforded a fair chance—are given the reins, so to say—and burst out into a blaze of beauty. That is their condition at Swanley in three large houses, which anyone who can do so may "go and see."

Where conveniences are not afforded for flowering Zonal Pelargoniums in winter the best varieties are now so fine, distinct, and many of them novel in colour, that they are worthy of being grown anywhere and everywhere for flowering under glass in spring or at any time. They are far too good for growing outdoors, are easy to manage, and seldom troubled with insects. But which are the best varieties some readers may be wanting to know. I can tell which I think are some of them. Of the brand new ones to "come out" in the spring the following compelled admiration; they are all single—Lady Brooke, delicate pink and white; Mr. Robert Cannell, the deepest salmon; Lord Rosebery, crimson, white eye, very fine; Maud of Wales, purple pink, fine form, one of the largest flowers yet seen; Lord Salisbury, a grand variety, magenta, purple shaded; Brilliantissima, crimson scarlet, very bright; Sunray, orange, the largest of its colour; and Hercules, scarlet, extra large pips. The following singles are in commerce and now flowering splendidly:—Beauty of Kent, mottled salmon; Cannell's Favourite, light magenta, large white eye; Parker's Favourite, reddish scarlet, very large truss, extra fine for winter; Mrs. Wildsmith, the largest rose pink in flower and truss; Winkfield Gem, rosy scarlet, very distinct and attractive; King of the Purples, very large trusses and distinct in colour; H. Cannell, jun., deep crimson, very dwarf and free; Swanley Single White, the purest white; Souvenir de Mirande, quite a novelty in Zonals, shrimp pink, bluish white at the base of the top petals; N. V. Noulans, of the same type as the preceding variety but deeper in colour, very distinct and effective; Stella Massey, blush white, and as the ladies say, "sweetly pretty;" Mrs. Norman, mottled salmon, enormous truss; Launcelot, one of the best scarlets, grand trusses, very free.

As a few of the finest and new double Zonals the following may be named:—Turtle's Surprise, a sport from F. V. Raspail, but much freer in flowering, habit like West Brighton Gem; Californie, orange shaded, very distinct; Silver Queen, the best white yet produced; Beauté Poitevene, semi-double, but very large flowers of a salmon shade; Sombre Horizon, the finest deep crimson; Salamander, light shaded purple, fine trusses; Tendre, delicate pink, a great favourite; Nydia, mottled salmon,

deep centre, very dwarf; M. Bruant, scarlet semi-double, a very fine winter variety; and Girome, very deep purple pink.

I am vain enough to think the above is the best selection of Zonal Pelargoniums that has been published in the Journal, and if I had all the varieties flowering in my greenhouse as they flower at Swanley I might be compelled to express my admiration as Mr. Cannell did his, when he gave them a parting glance as if loth to leave them. "Ah! beautiful, indeed; beautiful, beautiful, beautiful!"—FLORA.



JUDGING ROSES.

I BEG to enclose copy of a card which I have prepared, and would suggest that it be used in judging Roses and Chrysanthemums, &c., in close contests and keen competitions for valuable prizes. The judging is sometimes very unsatisfactory that something of this kind is much needed. The plan will probably be open for discussion. I hope you may bring it before your readers, so that exhibitors can give their opinion regarding it.

The advantages of the card are:—1, Exhibitors would at once see their exact position, and find out their weak and strong points, which would often save a deal of trouble and bad feeling amongst exhibitors and judges. 2, Young exhibitors would see what to aim at in selecting flowers for exhibition, and it would also teach them how to judge correctly. 3, A better idea of the show would be conveyed in the newspaper reports to those who cannot attend by having the number of points given to each exhibit. One season's show could be correctly compared with the other, and see exactly what progress was being made by referring to number of points given.—WM. R. COCKER.

[The card for thirty-six blooms is designed as follows:—There are three rows of squares of twelve each, with three end squares for the total of each row. There is another square for the extra points given for arrangement and superior staging, with a fourth for the grand total. Then there is a space for the judge's signature under the statement, "We hereby declare having judged these Roses carefully and to the best of our ability;" and a space for the secretary's signature completes the card, which measures $9\frac{1}{2}$ inches long by $6\frac{1}{2}$ inches wide. At the National Rose Society's meeting recently the subject was introduced, and one member said he would like to know what would be the size of a card for seventy-two Roses.]

LOCAL ROSE EXHIBITIONS.

THE readers of the Journal must be very tired of this correspondence, and for my part this will be my last letter on the subject. "An Exhibitor" refers me to two passages in his and "J. B.'s" former letters. With regard to his own reference, I have examined the N.R.S. Birmingham schedule, the names of the prizewinners as recorded in the Journal, and my own recollection, and do not understand to what he alludes. "J. B.'s" contention was, I think, fully answered. The Gloucester schedule shows perhaps rather more of a leaning to free trade in Division C than that of most other provincial shows; I have no doubt the Committee of that Society are well able to defend it. I did not, I think, suggest that the N.R.S. schedule "could not be improved;" but "An Exhibitor" gives an instance—"Will I tell him whether there are any restrictions that would prevent Mr. Lindsell or Mr. Pemberton from showing in any of the classes of the F division if they thought well?" I should rather think there are. I do not say it is rendered impossible for them, any more than it is impossible for the heir to a peerage and large estates to renounce them and set up in business as a chimney sweep; but there certainly are restrictions to dissuade him, and it has not been found necessary hitherto to pass a law to prevent it, for the sake of the sweeps.

As to the quotation from the "Rosarian's Year Book," "An Exhibitor" says I "omitted to mention" a passage. On the contrary I begged those who are interested in this correspondence to "read the whole." I wish I could get him to understand. Undoubtedly the late Mr. Frere's object in the passage in question was "to encourage the small growers;" but to do this, by trying to get them to raise their own standard, not by holding out any hopes of the standard being lowered for their benefit. The "neighbour" mentioned in the little anecdote in question is, in my opinion, one of the best judges and exhibitors in England, though his soil is so very bad that he never could do much with H.P.'s. He was encouraged by Mr. Frere, and by the accident of winning an extra prize for a single exceptional Marie Rady, exactly in the way in which I am now trying to encourage "An Exhibitor" to show more pluck and independence. Surely it is not supposed that he had extra classes arranged for him, or that his energy and determination would have been unavailing if it had not been for that one flower?

It is true he had, and still has, I believe, "a head with something in it;" but I cannot fail to credit "An Exhibitor" also with this

endowment. Let him also have his heart in the right place, and with patience and perseverance (but not without them) he may confidently look forward to having a "pocket with something in it" as well.—W. R. RAILLEM.

VEGETABLES IN AND OUT OF SEASON.

VEGETABLES in season, no doubt, most readers of the Journal are concerned in, but this may not be true of those not in season, for the reason that only under exceptional circumstances and conditions are they produced, so that it does not become a question involving more than a casual interest. In gardens fully equipped, both as regards labour and appliances, it is possible to have vegetables that are not considered seasonable throughout the autumn, winter, and spring months, and in establishments where such are provided it not infrequently becomes a matter of course proceeding rather than the opposite, and the luxury held in much less high esteem by the great and affluent families than by others of more moderate wealth where such are presented.

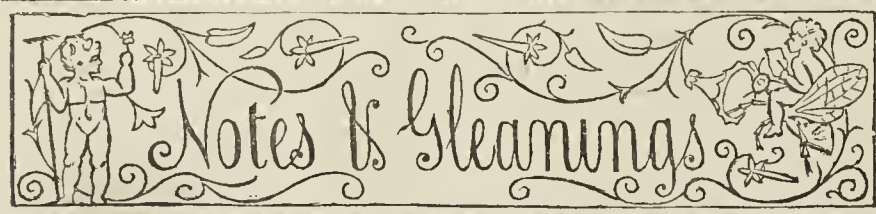
Those that might be considered in one, though not in a general sense unseasonable, would include French Beans, new Potatoes, forced Asparagus, Turnips, Carrots, Cauliflowers, and Seakale. It is admittedly a very pleasant experience to be favoured with an indefinite supply of such at almost any time, and their production should, and do generally, merit appreciation. French Beans are foremost among the autumn forced vegetables, and their growth, where a large supply is required, entails a considerable amount of labour, and it is the general rule in large gardens for these to be ready for use in pots by the time the outdoor supply is cut off by frost. Such work as concerning the garden might be greatly minimised by salting down selected surplus pods during the summer. These certainly are not popular in the kitchen, as they require much time in passing them through several courses of clear water so as to free them from the salt, and they are also from their flaccid character more difficult to prepare for cooking—hence their objection with the cook.

Young tender Carrots are easy enough to procure at almost any time where frame accommodation is plentiful, which in winter and early spring provide a choice and delicate dish; and the same remark applies with some truth to Potatoes, although these are not so commonly grown for an autumn and early winter supply as Carrots, or Beans. Seakale and Asparagus demand, perhaps, more general attention than any I have enumerated, and are always greatly prized in winter and spring. The old method of forcing Seakale by means of pots and stable manure is not so generally practised as formerly, because the present system of growing a fresh stock of crowns from their thong-like roots annually provides a superior sample, and is less laborious in attendant cultural requirements. The forcing of Asparagus requires a good deal more time and space than Seakale, and a thorough system of procedure must necessarily be observed and practised. Only by an annual sowing or planting in spring can a yearly demand be met with strong roots suitable for forcing. Under good culture two or three seasons are required to bring up to this desirable stage of development, and cases are not uncommon where the ordinary or outdoor supply thwarts the intentions or ambitions of many intelligent men holding responsible positions, although now that culture from seed is more generally adopted obstacles of bygone days are yearly becoming less. Dang beds are requisitioned by some for the forced supply of this popular vegetable; but greater ease and certainty is secured by modern water-heated structures, because proper temperatures are better and more under the control of the attendant than manure-heated bodies usually are.

Turnips lose much of their bolting tendency when sown under glass in spring. If it were not so they would be scarcely worth the trouble such work entails, and where frame accommodation is plentiful Turnips ready for use may be had almost by the time it is safe to sow outdoors. With similar convenience the autumn outdoor sowing and winter treatment of Cauliflowers may be altogether dispensed with; the late varieties of Broccoli now in cultivation making it a more simple matter to supply Cauliflowers without the occasion of any approach to a prolonged interval by an early spring sowing to be planted either outdoors or under frame protection absolutely. Collections of vegetables form an interesting, important, and sometimes imposing feature at many of the autumn Chrysanthemum shows; when even at this early date, forced vegetables go a long way in deciding their respective merits, sometimes perhaps to the exclusion of more useful because seasonable displays. Seakale and Asparagus, too, are valuable adjuncts to the early winter list, but I am inclined to agree with the many expressions of competitive and non-competitive individuals I have often met as to the undesirability of such labour creating produce figuring prominently in early November exhibits, because it would be few who would appreciate such at the table at so early

a date. Moreover, if it were so, a large store would be required to meet an uninterrupted succession, and instances are not too common where the labour allowed in gardens provides sufficient margin for so early a start in the forcing of vegetables, more particularly Asparagus. The man of small conveniences is strictly handicapped in public competition when he has to meet these unseasonable products in the first and second weeks of November. Some such restrictions as pertain to fruit collections where Pine Apples are excluded are needed in this case. These supply a chance to the fruit exhibitor very similar to that of Asparagus or Seakale to the vegetable competitor in early November, and a fair and equitable basis for fruit growers as supplied in the exclusion of specified species in the schedule stipulations of many societies should be meted out in a similar manner in vegetable contests.

Everyone connected with gardening pursuits must agree that to produce creditable samples of the two kinds at the date I have pointed out requires energy and foresight on the part of the grower, and must necessarily bring with it high commendation; but while admitting this, the fact remains the same, that only the man in possession of convenience and time can supply these edibles thus early, and abundant material from which to make a representative collection can be had without resort to these at autumn exhibitions or at the table. To supply an enforced demand for home use would in many cases meet with a reasonable objection; unless, of course, the desirable convenience and time were freely provided, and even then there is some doubt of their being ready at such an early time with certainty, because the ripening of the foliage and crowns depend largely on the nature of the season. However, with due encouragement there are but few men who will not strive to meet all wishes in the matter of forced garden productions, especially for special events or festivities.—W. S.



WINTERLY WEATHER of a severe character has prevailed in the London district during the greater part of the past week. On Saturday a dense fog pervaded the suburbs, and later in the evening this partially cleared, and a rapid fall in the temperature ensued, several records from low districts showing 20° below freezing point. On Sunday the trees and shrubs were loaded with a beautiful hoar frost, which lasted throughout the day, the temperature standing at about 16° until night, when it fell a few degrees lower. On Monday there was a rise in the temperature with snow, but frost continued both on Monday and Tuesday. In localities further south the frost appears to have been more severe. A gardener at Rehill, Surrey, informs us that every morning for a week the thermometer registered 20° of frost, and wonders if any other gardener can remember a week of greater severity. Mr. Molyneux, writing from Hampshire, says that Aucubas, Ligustrum japonicum, and Myrtles look as if parboiled, but on the same wall as the Myrtles Coronilla glauca appears uninjured. We suspect this plant is more hardy than many persons suppose.

— GARDENERS' ORPHAN FUND.—I beg that you will allow me through the columns of the Journal, to call the attention of gardeners in Chertsey and the surrounding district to a grand evening concert to be given in the Constitutional Hall, Chertsey, on January 22nd, in aid of the Gardeners' Orphan Fund? I should be glad of any help in the way of decorating the hall or in the sale of tickets, or making the concert known. The well-known singer to gardeners, Miss Mary Belval, and other popular vocalists in the district, have promised to assist. All that is wanted is the hearty co-operation of those interested in horticulture. May a good balance be secured for the Fund.—A. J. BROWN, *Hon. Local Sec., School of Handicraft, Chertsey, Surrey.*

— THE following are the arrangements of the ROYAL BOTANIC SOCIETY for Shows and meetings at Regent's Park in 1891:—Spring Exhibitions: Wednesdays, March 18th and April 22nd. Summer Exhibitions: Wednesdays, May 13th and June 17th. Evening Fête: Wednesday, July 8th, 8 to 12 P.M. Promenades: Wednesdays in May, June, and July, commencing May 6th; Exhibition and Fête days excepted. General Meetings, for election of new Fellows, scientific

discussions, &c., Saturdays, at 3.45 P.M. January 10th, 24th; February 7th, 21st; March 7th, 21st; April 11th, 25th; May 9th, 23rd; June 13th, 27th; July 11th, 25th; November 14th, 28th; December 12th. Anniversary, Monday, August 10th, at 1 P.M.

— HORTICULTURAL CLUB.—There was a large attendance of members and their friends at the Club rooms, Hotel Windsor, Victoria Street, Westminster, on Tuesday evening. The chair was occupied by Mr. John Lee, and there were present the Rev. W. Wilks, the Rev. F. R. Burnside, Rev. F. H. Gall, Messrs. Girdlestone, H. J. Pearson, A. H. Pearson, George Mount, Wallis, Jeffries, H. Turner, E. B. Lindsell, Geo. Paul, G. Paul, jun., T. Francis Rivers, W. H. Williams, &c. In the evening a discussion took place on the subject of Rose Stocks, which was opened by Mr. T. W. Girdlestone with an exhaustive paper, in which he gave an account of some experiments he had made, and stated that he believed the Polyantha would be one of the most useful stocks of the future. An instructive discussion, in which Messrs. Rivers, G. Paul, and others took part, and a pleasant and profitable evening was brought to a close with a vote of thanks to Mr. Girdlestone for his excellent lecture.

— A DWARF TROPEOLUM.—The variety we grew here last year, and so favourably noticed by your correspondent in last issue of the Journal, was sent to me by a friend in the neighbourhood of Liverpool, who, I understood to say, selected it from some seedlings. From what these originated I am unable to say. It is indeed an exceptionally free flowering, dwarf variety; the colour is a remarkably bright scarlet, which was intensified by the position in which our plants were growing last year in the garden, in front of a long row of a dwarf white Ageratum, and being in a sunny spot had all in its favour to produce splendid results. I know of no plant so dwarf that can produce such a mass of colour for so long a season as this Tropæolum.—E. MOLYNEUX.

— FRENCH LETTUCES.—In reply to an inquiry published in the *Journal of Horticulture* of the 27th ult., page 470, I beg to say that "blonde géante" is the French name for the Blond Blockhead Lettuce. That Lettuce is one of the best varieties introduced for many years; its head is very large, a little depressed, firm, and a good keeper; the outer leaves are large and ample, finely curled and undulated at the edges, spreading on the ground. In general appearance it resembles very much the well known Neapolitan Lettuce, but differs entirely from it by the colour, which is much lighter, and is a pleasing white instead of a very pale whitish green. It is, in fact, a fine and excellent summer Lettuce, which is very much in favour now with the Parisian market gardeners. We have had 12° Cent. (22° Fahr.) of frost on December 15th, and the Seine presents a very curious appearance with its floating ice. The steamboats do not run.—E. SCHÆTTEL, *Paris.*

— THE NATIONAL PINK SOCIETY (MIDLAND SECTION).—The following is the substance of a letter received from Mr. Chas. F. Thurstan, Hon Secretary *pro tem.*, Penn Fields, Wolverhampton:—"Following the successful exhibitions of florists' laced Pinks held this year at the Aquarium for the southern section, and the Botanical Gardens, Manchester, for the northern, it was suggested that a Midland Show should be held in connection with the Wolverhampton Floral Fête, July 14th, 15th, and 16th, 1891; and this having been taken up negotiations were opened with Mr. Green, the President of the Wolverhampton Horticultural Committee, with the result that he has consented to find the necessary tent space for exhibiting the Pinks, and also to recommend his Committee to contribute towards the prize money."

— A CORRESPONDENT in Florida writes as follows to the American Cultivator:—"The Loquat (*Photinia japonica* or *Eriobotrya japonica*), a half-hardy evergreen tree, growing to a height of about 20 feet, and belonging to the Rose family, is cultivated in Florida and California to a considerable extent. The white fragrant blossoms are disposed in terminal corymbs, below which spread the thick, leathery, shining, lanceolate leaves. The subsequent fruit, growing in Grape-like clusters, is ovoid in shape, as large as a medium sized Plum with a thick skin of a dull pinkish colour. The flavour varies, in some instances being too acid to be eaten with any degree of pleasure, but is more often sub-acid, or sweet and agreeably palatable. The blossoms appear chiefly during November and December, and the fruit ripens from February until May. Most of the stock used for planting here is seedling, although some of the choicest stock has been budded on the "Giant," an imported variety. The tree has been cultivated for many years in the gardens of Southern cities, but the seed from which most of the stock in this

State has multiplied came from St. Augustine. There are several variations in shape, habit and flavour, and careful selection will undoubtedly greatly improve the value of the fruit, especially if increased culture opens a northern market. The carrying capacity of the fruit is better than that of Cherries and Peaches, and its uses more varied. A few bunches with their shining green leaves are a very ornamental addition to a dish of dessert fruit. Besides being delicious eaten raw they make a jelly and sauce more piquant than Currants and Cranberries, and pies that recall and vanquish the memory of Cherry, Apple and Peach combined. The chief drawbacks to their culture are depredations of crows and mocking birds."

— **WELLS (SOMERSET) CHRYSANTHEMUM SHOW.**—In case you may like to insert it in your Journal, our 1891 Show is fixed for Tuesday and Wednesday, the 3rd and 4th November next.—**ALBION G. ANDREWS, Hon. Sec., St. Cuthbert's Lodge, Wells.**

— **THE BRIGHTON AND HOVE CHRYSANTHEMUM SOCIETY.**—We are informed by the Secretary, Mr. Mark Longhurst, that the recent Show was a great success. 9494 persons paid for admission at the doors, the receipts being over £324. This Show is an exceedingly well managed one in every respect, and both the Secretary and Committee are to be congratulated on the result.

— **THE COLD WAVE OF DECEMBER 13TH AND 14TH.**—A cold wave passed over us here during the end of last week and the beginning of this. On Saturday afternoon, between three and four o'clock, a thick, dark, low-lying column of smoke-like vapour, and not very wide, for it was clear on the north, south, and east, came up from the west, looking, as it might be, smoke from a heavy fire somewhere. The wind was east at the time, but it gradually came on and spread. It was so thick that we could not see the boles of the trees in the park, nor half their heads, but their tops were clearly visible. It passed on and away into the valleys, and remained so during the evening. Here and the higher parts of the town of Nottingham the fog and darkness was only ordinary, but in the lower parts of the town the fog was almost unpenetrable, and traffic became dangerous, and in some cases stopped.

— **THE thermometer gradually went down, at 10.30 P.M. there being 16° of frost. The centre of intensity appears to have been from about midnight to 8 A.M. on Sunday morning, when 20° was registered. It rose very slowly to 9½° about 2 o'clock P.M., when it again began to decline, and at 10.30 P.M. there was 17° of frost. At 6 A.M., Monday, there was 12°, the ground being covered with a thin sheet of ice, showing that there must have been a slight shower in the night, and the wind was south-west and west. Now, at 2.30 P.M., the thermometer stands at 33°, 1° above freezing, and a little sleet is falling. Whether the wave will pass away without a downfall of snow we cannot yet tell. The barometer is declining, and downfall of some kind will undoubtedly come.**—**N. H. POWNALL, Notts.**

— **LIVERPOOL HORTICULTURAL ASSOCIATION.**—Last Saturday a good attendance of members met together at the William Brown Street Museum to hear a paper by Mr. H. Ranger of Messrs. Ker's, Aigburth, entitled "Plant Culture under Glass and Insect Pests." Mr. White, the Chairman of the Association, presided. Mr. Ranger dealt with his subject in a very practical manner, dwelling chiefly on the importance of keeping plants clean, and the insects plants are most subject to, also the different remedies for their successful eradication. Many remedies were put forward, but Mr. Ranger placed confidence in paraffin for bug, fumigation for thrips, and sulphur for red spider and mildew, each to be used in proper proportions. Fir tree oil was also mentioned most approvingly. Those who entered prominently into the discussion after the reading of the paper were Mr. Tunnington, who had found beneficial results from the use of Campbell's fumigating insecticide, and Messrs. Bennett and Cox. The proceedings terminated in the usual manner.

— **BEGONIAS INSIGNIS AND NITIDA.**—What useful Begonias these are, either for a greenhouse or stove. The former is excellently adapted for pots, its bright green leaves and pretty pink flowers render it particularly striking at this season of the year. We take cuttings of this as early as possible in the new year, and they strike freely in any sandy soil, and, if placed in a warm propagating case, they will be rooted in about a fortnight's time. A compost of three parts loam, with good leaf mould, sand and charcoal added, suits them admirably, and we put three plants into a 5-inch pot. They are then placed in a warm, moist atmosphere, and the points of the shoots taken out when they have reached a height of 6 or 8 inches. At the beginning of April they are

placed into pots 3 inches larger, using the same material for potting, and are staked neatly out. As the weather becomes warmer we move them into frames, where they remain during the summer months. With this treatment they readily respond to the warmth of the greenhouse when placed indoors again, and a wealth of bloom is assured. Not only are the plants most ornamental, but the flowers come in when they are highly valued. In vases where the flowers are allowed to droop over the edges this Begonia is delightful in its effect, and is most pleasing by gas-light.

— **BEGONIA NITIDA** may be treated in a similar manner if grown in pots, but it is when planted out that it displays itself to the best advantage. Many who have vineries are often puzzled what to clothe the back walls with. In some establishments there is no need to cover them, but to others a wall 6 or 7 feet high is a great objection. Of course many more plants can be brought forward as suitable for such positions, but as the one under notice has answered our expectations so well I thought a note, for the benefit of those who have not tried this Begonia, might not be out of place. A few years ago we had planted on the back wall of our early vinery a double Hibiscus which covered the wall. True it answered the description as a covering, but it rarely flowered, and was oftener covered with green and white fly, which no fumigating or syringing would thoroughly exterminate. It was rooted out and the border remade. Two old plants of this Begonia which were getting rather too large were knocked out of the pots and transferred to the border and the growths tied to the wires. The plants soon began to revel in the new soil, and at the present time completely cover the wall. They are in flower, more or less, all the year round, and the flowers are most valuable. Apart from the flowers, the large glaucous leaves are at all times an ornament in themselves.—**R. P. R.**

— **ON Wednesday, December 12th, the members of the EAST ANGLIAN HORTICULTURAL CLUB held their monthly meeting at the City Arms, Norwich, the President, Mr. Morris, of Witton, occupying the chair. The business of electing a Chairman, Vice-Chairman, and eight Committeemen was first proceeded with, and in the case of the two former they were re-elected for the ensuing year. The former Secretary having left the city recently it was necessary to choose another in his place. The Chairman (Mr. Morris) proposed, and Mr. Ives, The Gardens, Rackheath Park, seconded, that Mr. Upstone, although a stranger to them and Norwich, should be elected Secretary. He believed he had had some experience in the working of a society such as this, and so would be very helpful. Carried unanimously. Mr. George Daniels then read the first of a series of papers on "Ancient and Modern," which was full of exceedingly interesting notes, and had evidently been compiled with a great amount of thought and research. The same gentleman was also unanimously re-elected Hon. Treasurer. It may be remembered that the newly appointed Hon. Secretary until recently represented the firm of Messrs. Peed & Sons, of Norwood. He is now with Messrs. Daniels Bros., and resides in Norwich.**

— **THE BIRMINGHAM GARDENERS' ASSOCIATION.**—At a fortnightly meeting on the 15th inst., a very interesting paper on "Evergreen Shrubs, &c., for Autumn and Winter Decoration" was read by Mr. Petch, formerly the head gardener at Manley Hall, Manchester, and for many years one of the travellers for Messrs. Rd. Smith & Co., Worcester. Much useful information was given, especially in lists of the most prominent kinds of golden and silver variegated shrubs and Conifers, as well as the better class of evergreen shrubs. Amongst berried plants Mr. Petch noticed the best varieties of Aucubas, Pernettias, now several bright coloured varieties, Skimmias, Cratægus, Pyracantha Lelandi, and Vaccinium vitis-idaea. Low-growing shrubs most suitable for window boxes and small beds were mentioned. Hardy herbaceous plants were fully noticed, especially the evergreen trailing kinds for carpet work, silver coloured forms being also named and described with treatment most suitable to them.

— **A CHRYSANTHEMUM SOCIETY FOR CIRENCESTER.**—A well attended meeting to consider the advisability of instituting a Chrysanthemum Society for Cirencester, was, says the *Wilts and Gloucestershire Standard*, recently held at the Fleece Hotel. The meeting was the outcome of correspondence on the subject that has recently appeared in our columns, though the idea had been previously entertained by a few gentlemen interested in floriculture. Mr. Rawlins was voted to the chair, and amongst those present were Messrs. C. Mackinnon, H. L. Cooke, C. Smith, W. Griffiths, S. F. Hamper, Jesse Smith, A. Tranter, H. F. Sare, W. H. Cole, Job Saunders, G. Dash, C. Bennett, T. Gardner, A. Wall, T. Arnold, O. Orpett, D. Elkins, &c.

The Chairman having briefly opened the proceedings, it was proposed by Mr. Hamper, and seconded by Mr. Jesse Smith, that a Society be formed for the encouragement of the growth of the Chrysanthemum in Cirencester, and the motion was unanimously carried. It was also decided, on the motion of Mr. Cole, seconded by Mr. Gardner, that the Society be entitled "The Cirencester Chrysanthemum Society." It was unanimously agreed to ask Earl Bathurst to become President. Mr. Rawlins was elected Treasurer, and Mr. Sare Secretary. It was resolved that the membership of the Society be confined to subscribers of half a guinea and upwards. It was decided that a Committee of nine be appointed to act with the President, Treasurer, and Secretary, to carry out the rules of the Society, and the following were elected:—Messrs. E. C. Sewell, H. L. Cooke, W. J. Jefferies, G. H. Harmer, S. F. Hamper, E. Darby, T. Arnold, O. Orpett, and D. Elkins. It was decided that the Committee should meet and draw up rules, and have a general meeting in January, and it was also agreed that the Committee should have power to add to their number.

— THE ALMANACK SEASON. — Messrs. Foster & Pearson send us from Beeston the usual useful series of twelve monthly sheets for 1891. The dates are very clear, and each sheet contains reminders on subjects in which gardeners are interested. These sheets are well adapted for hanging in seed rooms, offices, or other positions that may be convenient for reference.

— THE BIRMINGHAM CHRYSANTHEMUM SOCIETY. — The customary annual dinner of the Society took place on the 10th inst. at the Colonnade Hotel, and the large dining-room was well filled. Mr. W. B. Latham, Curator of the Botanical Gardens and Chairman of the Committee, was in the chair. The toast of "Success to the Society" was proposed by Mr. R. Parker, The Gardens, Impney, who alluded in terms of praise to the liberal prizes offered by the Society, and to exhibitors, and said that this year he had not been an exhibitor as he was desirous of trying his strength at the Exhibition of the National Society at the Royal Aquarium, and that next year he hoped to be again an exhibitor at Birmingham. Mr. Lambert, The Gardens, Onslow Hall, Shrewsbury, the winner of the £20 prize at the late Show for 48 blooms, replied to the toast of "The Successful Exhibitors," and alluded in very favourable terms to the excellent exhibits generally at the recent Show. The local nursery and seed trade was well represented, amongst them Mr. H. Pope, the founder of Messrs. Pope & Sons' Nursery and Seed Business, and in excellent health and spirits.

— FLORAL DECORATIONS. — The *American Garden and Forest* gives the following account of their elaborate floral decorations:—"On the occasion of a ball recently given in the club house at Tuxedo Park the decoration of the ball-room was entrusted to an expert, who, nevertheless, is not a florist—Miss Stearns, of the Associated Artists of 115, East Twenty-third Street. The result proved that something might be done in the way of floral decoration which would lack the conventionality that so often marks such arrangements without falling into the heterogeneousness of amateur attempts. The room is very large and circular in shape, with fourteen windows alternating with fourteen columns which sustain the cornice. On one side is a stage where the musicians were to sit. This was decorated in harmony with the pretty woodland scene which formed the background, high Palms flanking the side, while a row of lower Palms, mingled with Chrysanthemums, bordered the stage, and trailing Ivy fell over the front. Chrysanthemums were also intermixed with the taller Palms, in three shades of pink, making a charming effect as the electric light shone up over them from the foot-lights. This scheme was continued around the room by banking the window recesses with Hemlock boughs and great sprays of white Chrysanthemums, the dark green foliage being carried up into the coves of the domed ceiling. The columns were covered with autumn foliage, Oak leaves of a dark reddish bronze colour forming the base, and being shaded gradually up into terra-cotta tones and finally into the yellow of Maple foliage. On this background Chrysanthemums were arranged, likewise in graded colours, beginning below with dark red blossoms and shading up to the capitals, which were encircled by masses of golden Grandiflorums. To obviate, however, an undue contrast between these red and yellow pillars and the pink and green of the stage, the two columns adjoining these were differently treated, being wound with Hemlock foliage interspersed with white Chrysanthemums—the same scheme of colour chosen for the window recesses. The total effect of the beautiful room thus adorned was at once dignified and festal, and—an essential consideration in such cases—it made an excellent background for the gay dresses which filled it."

— ROYALTY AT READING.—The famous Berkshire town was *en fête* last Monday, on the occasion of H.R.H. the Prince of Wales installing the Duke of Clarence and Avondale Grand Master of the Freemasons in the county of Berks. They were accompanied by the Duke of Connaught. The town was gaily decorated, the bells pealed continuously, and the streets were thronged with people who desired to do honour to the popular Prince and the other members of the Royal Family who were present on the occasion. No other building in the town being large enough for the banquet Messrs. Sutton & Sons were requested to grant the use of one of their agricultural seed stores for the occasion. This was transformed into a handsome banqueting hall, and easily accommodated the six hundred Masons who sat down. The room and lengthy approaches thereto were beautifully adorned with plants and flowers, a thousand plants each of Primulas and Cyclamens being conspicuous by their colours and floriferousness. In the corridors the plants were arranged on mossy banks, and the tables were also attractively furnished. In front of the Royal Princes a number of crimson and white Cyclamens, Vulcan and Sutton's White, were arranged in panels—a veritable flower garden of the masonic colours. The Royal visitors were received by the founder of the firm, Mr. Martin Hope Sutton, and the present senior partner, Mr. Martin John Sutton, and conducted to the banquet. Visitors not being Masons, including the Mayor of the town, were entertained to luncheon in the Lecture Hall. Before his departure the Prince of Wales sent for Mr. Martin J. Sutton, and specially thanked him for the completeness of the arrangements which were so successfully carried out. On the following day the employés of the firm, with their wives, to the number of six hundred, were entertained in the building in honour of the event.

GOODRICH COURT.

THE Wye valley is famous for its beautiful scenery, and situated on a lofty eminence commanding some of the most lovely views stands Goodrich Court, the seat of H. C. Moffatt, Esq. The engraving, fig. 72 shows the eastern aspect of the Court, from which the lawns slope down in terraces toward the river Wye, presenting views of the surrounding country that would be difficult to excel. At one corner of the Court on this side are two very fine Cedars of Lebanon, and other fine trees are Cupressus Lawsoniana, Pinus excelsa, &c. The next terrace is bordered on the north side by an extensive bank of St. John's Wort, and on the south by choice Conifers, amongst which are conspicuous Cedrus atlantica, Picea Nordmanniana, P. magnifica, P. nobilis, P. pinsapo, Abies in variety, and many other well-grown and shapely trees. On the lowest terrace good views are obtained of Goodrich Castle, which was so well defended against Cromwell's soldiers; the old castle in ruins surrounded by trees, the Wye sweeping down in the valley, and extensive woods for a background form a lovely picture that no pen could do justice to. The north side of the Court presents a splendid view of the Wye valley towards Ross, and on clear days the Malvern hills are visible in the far distance. The western side has not the advantage of water, like the eastern and northern aspects, to improve the scenery; but it has charms all its own of hills and vales, with the Welsh mountains appearing prominently in the background. On the south side the stables were formerly located, but new stables have been erected a distance away, on the best principles, and the old ones are now being pulled down and a new wing added, and when complete the southern side of the Court will no doubt be as attractive as any of the others.

The lawns cover an area of nearly seven acres, on which are judiciously dotted some fine Golden Yews and other choice evergreen and deciduous trees. Leaving the Court by a drive through the park we come to the old gardens, which are being removed to a better and more commodious site, of which more anon. Many of the houses have been removed, but a few vineries and Peach houses remain for the present, in which are well grown Vines and Peach trees from which superior fruit is obtained. At the time of visiting Mr. Spencer, who has had charge here for many years, all the houses in the old gardens, with one exception, were filled with a truly magnificent collection of Chrysanthemums consisting of all the very best varieties, that would do credit to the cultivator on any exhibition table. So far Mr. Spencer has not thought of exhibiting, but it is hoped he will do so at no distant date. It would be useless to name any variety or varieties as being conspicuous, for all were good, any kind at all inferior being rigorously excluded; the result is consequently all that could be desired. In another house is a fine collection of stove plants, consisting of great plants of Anthuriums, Alocasias, and Marantas, which were being divided into smaller pieces as they had become too large for the houses. Ferns are very large and healthy, comprising all the most choice and useful kinds. A few of the most noteworthy are Adiantum farleyense, Aspleniums, Pterises, Davallias, Nephrolepis, and many others. The side stages are filled with useful table plants, chiefly Crotons, Aralias, Pandanus, Asparagus, Dracenas, and Palms.

The new gardens are about a quarter of a mile away from the old site, and are admirably planned. The walled kitchen garden covers about four acres, and is approaching completion. Most of the ground

is cropped with the usual supply required for a gentleman's establishment. Deserving of special mention is a large quarter of Carrots, fine roots and heavy crop, untouched by disease or insects so prevalent amongst Carrots this year. A fine quarter of Autumn Giant Cauliflower was conspicuous by its sturdy habit and large firm heads. Passing into the houses, the Vines in a range in four divisions give promise of satisfactory results. The wood is splendid, and the buds large and prominent. Some good bunches of Muscat of Alexandria were hanging in the department devoted to them, and in the latest division large bunches of Alicante and Mrs. Pearson were noticed. The latter Grape is highly spoken of by Mr. Spencer as a high-class, late-keeping white Grape, and is strongly recommended for extended cultivation.

Several divisions are occupied by Pines, and there can be no question of this delicious fruit being well grown at Goodrich, more especially Queens, which are extra good; suckers, succession, and fruiting plants are models of health and high cultivation. At the back Melons and Cucumbers were producing good crops, and suspended over the path-

being formed of the newest varieties. The old and very useful *C. insigne* is strongly to the fore, most of the plants being of good size and finely flowered, and of several excellent types. *C. Spicerianum* is perhaps better grown than any other, most of the spikes having two flowers, and some have three. This is an unusual occurrence, and speaks volumes as to the system of management. Many other worthy objects must be omitted owing to want of space. A large Peach house was just ready for planting, and several other houses were in course of erection, all on the best and most improved systems. A house just completed was being filled with *Eucharis* and *Pancratium fragrans*, with *Stephanotis* trained on the roof. Well situated about the middle of the houses is the stokehole, in which is fixed a "Red Rose boiler," and Mr. Spencer speaks in high terms of its efficiency. A long and commodious range of shedding runs each way from the stokehole and coal-shed, comprising of Mushroom house, mess rooms, tool sheds, root and potting sheds, fruit rooms, and potting shed, office, &c. The lobby is admirably designed for the comfort of the young men, and is conveniently situated;

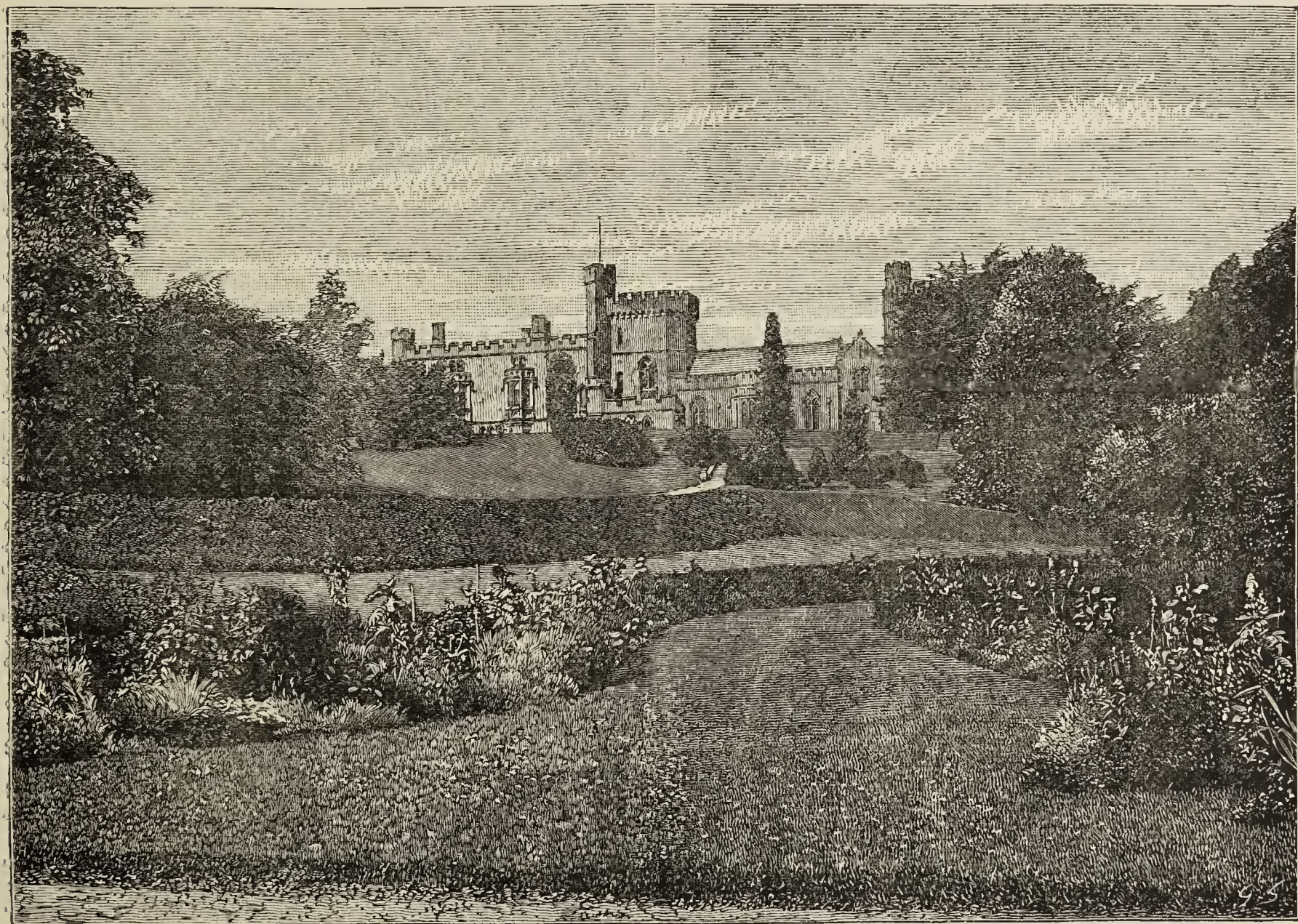


FIG. 72.—GOODRICH COURT.

ways are healthy plants of *Saccolabium*, some of which are throwing out strong spikes of bloom. A few *Dendrobiums* requiring strong heat are also hanging in one of the divisions, and have in every case made fine growths.

A large Orchid house next claims attention. It is divided into two compartments with a central stage and side stages round. Under each stage are tanks of water, and no doubt the humid atmosphere thus caused partly accounts for the rude health of the plants. *Laelias* are represented by magnificent pieces 2 or more feet through, with a dozen or two of flower spathes. *Cattleyas* are in great force, consisting of all the best varieties, and show the skill of a master hand. *Cymbidium eburneum* was throwing up two spikes from each pseudo-bulb, *Zygopetalum Mackayi* was flowering profusely, *Oncidiums* were flowering freely in a few cases, *Cœlogyne cristata*, the Chatsworth variety, and *C. cristata Lemoni* were promising a wealth of bloom from large vigorous plants. *Anthuriums*, more especially Ward's variety, evidently thoroughly enjoy their treatment, plant and foliage being very large and healthy. *Cypripediums* have not occupied much of Mr. Spencer's attention till somewhat recently, but a choice collection is rapidly

in fact the arrangements throughout are of the best order, and speak well for the liberality of Mr. Moffat and his consideration for his men. With many thanks to Mr. and Mrs. Spencer for the kindness and hospitality I must conclude my record of a very pleasant and enjoyable visit.—VISITOR.

FLORAL DECORATIONS AT THE ROYAL AQUARIUM.

WILL you kindly permit me space in your valuable paper to make one or two suggestions for improvement in the arrangement of the schedules in the class for bouquets, wreaths, &c., at future Shows at the Aquarium, those existing at present being most unsatisfactory to exhibitors? An instance at the recent Show goes far to prove this. It distinctly states in the schedule that in this class all exhibits for table decoration were to be restricted to a table space not exceeding 36 square feet. Now, one exhibitor in this class far exceeded this space, having a raised background covering a space equally as large as his table, and so making 72 feet in all. My argument is this: If such background is to be used (and I admit it is a great improvement, as it undoubtedly

sets off the table) then let it be specified in the schedule whether that background is to be dressed or not. As the schedule was worded one would conclude everything was to be exhibited on the table in a space of 36 square feet. I do not for one moment wish to question the merit of this exhibitor's display, but were not others in this class placed at a disadvantage? and would they not have been enabled to have competed more fairly if conceded a similar space?—GEORGE NEWMAN, F.N.C.S.

ROYAL HORTICULTURAL SOCIETY.

SCIENTIFIC COMMITTEE, December 9th.—Present: Dr. Masters, in the chair; Mr. McLachlan, Mr. Michael, Rev. C. Wolley Dod, Professor Church, Dr. Scott, Dr. Oliver, and Mr. Blandford, Hon. Secretary.

Diseased Grapes.—Grapes received from Mr. Barron were exhibited, attacked with fungoid disease. Dr. Masters pointed out that the disease has been described by Mr. Worthington Smith, and called attention to its resemblance to and possible connection with "scald," a much commoner complaint in which no fungoid growth has been described.

Soil for Alpine Plants.—The Rev. C. Wolley Dod showed samples of burnt clay, which he had found the best soil for Alpine plants. It prevented the growth of Hepaticæ, and was soft and friable, and far superior to broken brick. The cost of burning was about a shilling a ton. Professor Church undertook to determine the chemical composition of the earth used.

Effects of Frost.—Dr. Masters showed leaves of Aucuba blackened and killed by exposure to a temperature of -2° Fahr. on the night of November 28th at Croydon. This exceptional temperature was independently confirmed. The Aucuba is among the hardiest evergreens. The variegated leaves appear to suffer most from frost.

Abnormal Development of Bulbs.—Dr. Masters showed bulbs, probably of Freesia, which had sent up a premature development of the shoots in an upward direction, bearing secondary bulbs on its sides. It appeared to be a converse phenomenon to what occurs in the case of bulbs, which send down "droppers," and may possibly be due to too deep planting.

Banksian Rose in Fruit.—Dr. Masters also showed a Banksian Rose which had been cross-fertilised by another species. The carpels were developed, but not the hypanthus (the "hip"), so that the same condition was found as in the carpels of Potentilla or Geum. This species has not been previously known to fruit in this country.

Hybrid Orchids.—Dr. Masters showed two hybrids between Cypripedium Chantini and C. Spicerianum, whose parents were of inverse sex.

Study of Plant Pathology.—Dr. Masters read a letter he had received from Dr. Sorauer of Vienna, inviting him to join the Internationale Phyto-Pathologische Commission for the study of plant diseases. This Commission has arisen out of the recent Exhibition of Forestry in Vienna. He thought that the invitation might fitly be extended to other investigators of such matters. After some discussion, Mr. Michael moved, "That it be suggested to Dr. Sorauer that the Internationale Phyto-Pathologische Commission place itself in communication with the Chairman of the Scientific Committee of the Royal Horticultural Society with a view to an arrangement for the exchange of information and assistance between the two Societies."

This was seconded by Professor Church and carried.

Fog Investigation.—Dr. Oliver proposed to present an *interim* report at Easter. This was agreed to.

VEGETABLES FROM NOVEMBER TO MAY.

[Prize essay read by Mr. Atkins, foreman in The Gardens, at Kelton, Aigburth, before the members of the Liverpool Horticultural Association.]

To secure a constant supply of vegetables from one acre of garden during the winter and spring months, from November to May, requires considerable forethought and careful management. The varieties and quantity that can be grown of course depend on the facilities at command. For instance, where means are afforded for the production of Asparagus, French Beans, Mushrooms, and Seakale, these may be had in almost constant use during the time named, and will increase both the variety and quantity; but a good general supply may be obtained by growing a quantity of Brassica, Celery, and root vegetables.

I consider April and May the worst months for vegetables, as the winter stock is nearly exhausted, and the summer stock is hardly ready for use. For these months I should recommend a good supply of late Seakale, Broccoli, Spinach, and spring Cabbages. I have endeavoured to arrange in alphabetical order the vegetables, natural and forced, including common salads in general use during winter and spring. Cauliflowers I have not mentioned, as they can only be depended upon during the early part of November, being insufficiently hardy to stand very severe weather, and in our northern latitude the autumn sown plants are rarely ready for use before June.

With regard to the vegetables which are most profitable for a

garden of one statute acre, I should recommend that nearly half an acre be planted with Potatoes, the remaining ground to be filled with Broccoli, Brussels Sprouts, Cabbage, Carrots, Celery, Parsnips, Onions, and Salsafy.

ARTICHOKES (JERUSALEM).—A most useful vegetable for winter use. To insure a good crop trench a piece of ground in autumn, and give a dressing of manure. In March plant good tubers in rows 22 inches apart and 18 inches between the tubers. They will be ready for use in November, and may be taken up as required. All the remaining tubers may be lifted early in March; those that are wanted for stock replanted, and the others stored in a cool shed.

ASPARAGUS.—To obtain this vegetable from November onwards forcing must be resorted to. Make up a good hotbed, and cover it with about 4 inches of soil; place the crowns close together, and cover them with 2 inches of fine soil. A little air should be given at all times, except the outside temperature is below freezing point. A steady temperature of 60° will be sufficient. A succession of hotbeds will be necessary to keep up a regular supply until the outside beds are ready for use.

BEEF.—To secure good roots of this important and largely used winter salad choose an open situation and a light sandy soil. In autumn trench the ground to a depth of 2 feet; dig it in spring, and break the soil up rather fine. Sow the seed in April or May in drills 2 inches deep and 9 inches apart. The seeds grow more quickly if steeped in water previous to sowing, afterwards allowing them to become dry enough to separate from each other. When the plants are large enough thin them to 6 inches apart, and in dull weather fill any blanks that may occur. Lift the roots before hard frosts come, cut off the leaves to within an inch of the crown, place the roots in a cool shed, and cover them with sand or ashes.

BEANS (FRENCH).—French Beans for bearing during the winter and spring months require to be grown in a house specially adapted for forcing purposes. A temperature of 60° to 70° , with plenty of moisture and light, is essential to successful results. Successional sowing should be made from the beginning of September until March, using a compost of good loam with a little well rotted manure. The most useful sized pots are 8-inch; six beans should be sown in each pot and covered with about 2 inches of soil. The first sowing may be placed in a cool house until started and brought into heat when required, but the later sowings should be placed directly in the forcing house. Give air on every favourable opportunity, and keep the plants free from insects. Liquid manure will be found very beneficial when the pots are full of roots and the plants are bearing freely.

BROCCOLI.—This vegetable follows the autumn Cauliflower, and is invaluable for winter and spring use. It succeeds best in a deep, rich, loamy soil. Prepare the ground in autumn by trenching and manuring. Sow on a warm border from March till May, and prick off the seedlings when they are large enough. Choose dull showery weather for the permanent planting, which should be done in June or July. Allow a distance of 2 to 3 feet between the rows, and an equal distance between the plants. The heads of the plants must be bent northwards before frost sets in, and in so doing care must be taken to disturb the roots as little as possible.

BRUSSELS SPROUTS.—This is one of the most productive and delicious of our winter vegetables. To secure it in good form it should be grown in deep, rich soil, which must be trenched 2 feet deep and heavily manured in winter. In February and March sow the seed in boxes or pans of light soil and place them in a cool house. When the plants are large enough prick them into cold frames or prepared beds on a warm border. In May or June transplant in rows 2 to 3 feet apart, leaving a space of 18 to 24 inches between the plants. Plant with good balls of roots and give a good watering that they may receive as little check as possible. Keep them clear from weeds and earth up as soon as large enough.

CABBAGES.—To ensure a supply of good Cabbages for the winter and spring months it is necessary that they be planted on good, well manured ground. Select a somewhat sheltered situation for the winter and earliest spring crop, which should not be planted too soon in autumn, as the plants are more liable to run to seed. For a spring supply sow from the end of July to the middle of August in beds of light soil, afterwards covering the beds with netting to protect the seeds from the ravages of birds. Transplant when large enough in lines 18 inches to 2 feet apart, and the same between the plants. To provide a supply during the winter sow Colewort Cabbages from the middle of June to the end of July, and transplant when large to 1 foot apart.

CARROTS.—Carrots require to be grown in soil of a good depth and of a light sandy nature. Ground that has been manured

for a previous crop will suit them best, as fresh manure tends to make the roots forked. The ground must be free from wireworms and injurious insects. I have seen ground intended for Carrots given a heavy watering with salt water in winter, and judging from the following crops it proved highly beneficial to the growth of the Carrots, and also acted as a preventive of maggots.

For the main crop sow in March or April in shallow drills 9 inches apart. The seed requires to be well rubbed between the hands before it is sown, otherwise it cannot be distributed equally, the seeds being apt to cling together if not well rubbed. Thin to 2 inches apart, and when they have gained a useful size every other one may be drawn for use, leaving the main crop 4 or 5 inches asunder. The main crop will be ready to lift early in November. The tops should be cut off close to the crown, and the roots stored in sand or ashes in a dry place. Early Carrots are often in demand, and may be obtained by sowing on a mild hotbed in early spring. Stable litter, with plenty of leaves mixed with it, may be prepared and placed into a frame; this should be trodden firmly, and allowed to remain a few days before sowing. Eight inches of soil should be spread over the manure, the seeds sown broadcast and watered in. Air should be given on every favourable opportunity when the plants appear, or they will soon be drawn.

CELERY.—The best and most open situation in the kitchen garden must be selected for the cultivation of this vegetable, with the best farmyard manure dug into the trenches before planting. Sow the seeds in February in pans of light soil and placed in a moderate heat. As soon as the plants are large enough they may be pricked off into frames or deep boxes, using a compost of two parts loam, one part leaf mould, and one part good decayed manure. Frames are best for this purpose as allowing a greater depth of soil than boxes, consequently the plants are not so liable to "bolt." When boxes are used a good layer of manure over the crocks will be found advantageous in sustaining moisture at the roots. Harden the plants gradually and place them out in June in trenches which have been previously well manured. The trenches should be 15 inches wide and 12 inches deep; the plants are best placed in angles 9 inches apart. During the whole growing period never allow the plants to suffer from want of water; frequent supplies of liquid manure will be found beneficial when they are in the trenches.

Earthing may be commenced in September, and continued by stages, first tying the plants round with matting to keep the soil from the hearts and taking all laterals and dead leaves from the base. A sprinkling of lime among the plants when earthing up will be found efficacious in destroying slugs; it also adds materially to the flavour. Cover the ridges with dry straw or litter when frost sets in.

(To be continued.)

PHYLLOCACTUS.

As attention is being especially drawn to these plants, and Messrs. J. Veitch & Sons of Chelsea have a series of choice hybrids, some of which have been certificated, for distribution next year, I have been desired to reproduce a chapter that was written on this subject some years ago. The issue of the Journal in which the notes first appeared has been long out of print, and my little work on "Cactaceous Plants," in which they were embodied, is also out of print; consequently with some emendations and additions I again give the article referring to the Phyllocactus in response to the wishes of several who are interested in the plants.

The most valuable genera in the whole Cactus family, considered from a horticulturist's standpoint, are undoubtedly the Phyllocactus and the Epiphyllum, and they are the only two which can be said to have partially escaped the modern neglect of the Cactæ as garden plants. These are still established favourites in many places, but they are comparative strangers to numbers of cultivators who might advantageously include them in their collections. Profuse in flowering, with large showy blooms, most variously coloured, from the richest crimsons and brightest scarlets to the most delicate rose and blush tints, they are unexcelled in beauty by any of the ordinary plants grown for decoration. So far from being fastidious or requiring any particular routine of culture, they are often treated with utmost carelessness, stored in "out-of-the-way" corners, and left in a measure to take care of themselves; yet do they repay their ungenerous hosts with abundance of glorious flowers, and then only are they brought into sight, to be again consigned to the old quarters when the flowering season is over. Like every other plant that is easily grown the Phyllocactuses and their allies respond most promptly to liberal treatment, and well as they may seem to be under the careless system, they are incomparably superior where their moderate requirements are studied and provided for. It is sometimes said that the flowering period is so short that they are scarcely worth the space they occupy for so many months, but assertions such as these have been formed upon limited experience. Phyllocactuses may be had in flower for three or four months in the year by having a dozen or

two plants in different stages, and with the Epiphyllums the flowering season can be prolonged for at least six months out of the twelve in an almost unbroken succession. Outside the ordinary decorative plants, such as Pelargoniums, &c., there are very few which possess so many recommendations as these, and it is to be hoped that their merits will become more widely recognised.

The genus Phyllocactus as now constituted includes thirteen species, natives of tropical America, Mexico, and Brazil, and are chiefly distinguished by their flattened leaf-like branches, with a prominent midrib, and by the large many-petalled flowers being produced from the notches in the edge of the stem or branches. These characters suffice in a broad sense to separate them from Cereus and Epiphyllum, their near neighbours. They are also epiphytal in habit, but this character is shared by several other Cactæ, and is therefore only useful as a cultural guide. In gardens, and even amongst botanists, there has been much confusion respecting these plants, some of the species having been referred to Cereus, some to Epiphyllum, and most of the older forms appear in works under the title Cactus. The principal confusion has, however, been between the Epiphyllums and the Phyllocactus; for even now, although the distinction has been clearly pointed out by recent writers, the two names are frequently employed in current literature as synonymous.

Culture.—The most important item in the culture is the soil, and this is easily provided. A light turfy loam should form the basis of the compost, and to this may be added one-third of leaf soil, old dried cow manure, and sand, well mixed together and employed in a rather dry state. The pots must be well drained, as the plants do not require a great depth of soil, and any approach to stagnation about the roots is the surest means of causing failure. When plants have attained a good size and the pots are filled with roots an annual top-dressing of soil and manure will be sufficient without repotting them, and is even preferable, as the plants appear to flower more profusely when retained for some years in the same pots. It is, however, occasionally necessary to turn the plants out to see that the drainage is in proper condition. As regards temperature, Phyllocactuses are by no means particular; they will succeed in an unheated house or frame, in a greenhouse or in a window, and in all these positions the majority will flower freely, but the best results are obtained by having them in a warm greenhouse, what is termed an intermediate house, during their growing period. After the growth has been completed they can be placed in cooler and more airy quarters, or a similar result can be obtained by keeping the frame closed while growth is advancing and ventilating freely afterwards.

Propagation.—They are readily increased by means of cuttings, which, if inserted in sandy soil in moderate heat and kept rather dry for a week or two, only slightly syringing them, will form roots, and can be placed singly in 60-size pots. Seeds are produced freely, and these may be sown in pans of light soil, placed in a dry part of the stove or in a warm house until they germinate, when a light position must be afforded the plants until they are large enough to be potted singly.

SELECT SPECIES.

P. ACKERMANNI, Haworth.—One of the most handsome and best known forms in cultivation, remarkable alike for the large size, rich colour, and profusion of its flowers. It has been regarded by some writers as a hybrid, and is mentioned as such by Herbert, but upon what evidence does not appear. Lindley, on the other hand, gives a full account of the plant, and states that it was brought from Mexico by Mr. George Ackerman, in whose honour it was named by Haworth, the original stem having first flowered in Mr. Tate's nursery in June, 1829. A somewhat peculiar circumstance is, however, mentioned by the same authority—namely, that a seedling raised by Mr. Smith, gardener to Lord Liverpool, Coombe Wood, was flowered at the same time, and proved so similar in its characters that they could only be distinguished by a close examination. Whatever it be there can be no question respecting its beauty, and that is sufficient to recommend it to the attention of the readers of these notes. The flowers are 6 to 8 inches in diameter, with rich crimson shining petals, the outer ones lighter in colour. The stems are flat and crenated or notched, bearing the flowers on these depressions. Several varieties and hybrids have been raised from P. Ackermannii by crossing it with species of Cereus, especially C. speciosissimus, which has yielded a race of handsome forms differing in the colour and size of the flowers, but chiefly shades of crimson or red. It is also said that P. Ackermannii has been successfully crossed with Cereus flagelliformis in France, the plants resulting differing greatly from both parents, but I have never had an opportunity of seeing these forms. A beautiful hybrid between P. Ackermannii and P. crenatus has been raised and flowered in this country, in which the inner petals were of a soft pale rosy tint and the outer a deep crimson, affording a pretty contrast. One valuable character of this species and its varieties is that they may be had in flower from May to August or even longer than that with a good stock of plants brought forward a few at a time.

P. ANGULIGER, Lemaire.—An extremely distinct plant, easily recognised by the deeply angled stems 2 to 3 inches in diameter, which are indented on the margin somewhat like a large saw with the teeth turned upwards, forming blunt triangular lobes. The flowers, which are 3 to 5 inches in diameter, the petals white, the sepals narrow, orange or yellowish, and spreading, open during the day, and continue expanded for a considerable time, giving out a powerful fragrance. It was found by Hartweg during his travels in the west of Mexico growing upon trees

in a forest where Oaks predominated, and specimens were by him sent to the Royal Horticultural Society.

P. BIFORMIS (*Disocactus biformis*, Lindley).—Though not equal in attractions to other Phyllocactuses, this is an interesting plant, forming in appearance a link between those species and the Epiphyllums, but it is not likely to become of much garden value, and will only be grown to make a collection complete. The plant was introduced to England from Honduras at the same time (1839) and by the same persons as *P. crenatus*, and was described as a *Cereus*, but was subsequently constituted a genus by Lindley under the name *Disocactus*, and by Salm Dyck under the slightly different title of *Disisocactus*. The selection of these names was doubly unfortunate, first because there is a genus termed *Disocactus* quite distinct from this, and secondly because the plant does not possess sufficient characters to separate it from *Phyllocactus*, to which it is now referred by botanists. Plants in cultivation are usually rather small, but they will attain the height of 3 feet, branching freely and forming a rather graceful fleshy shrub. The branches are narrow, flattened and leaf-like, reddish on the margin, and bear the flowers at the points. The petals are narrow, 2 to 3 inches long, and partially combined into a kind of tube of a pale rosy pink colour. The flowers, however, do not last long, and are followed by bright red fruits about half an inch long, which, being produced abundantly, have a rather pretty effect.—L. CASTLE.

(To be continued.)



LARGE ANEMONE CLASSES.

IT is evident by the experience of the past exhibition season the present classification of the large Anemone section has caused much dissatisfaction, and not a little confusion amongst exhibitors. In many cases disappointments through disqualifications have been the result with the affiliated societies where the exhibits were judged according to the classification in the National Society's catalogue.

When the Japanese Anemones were first introduced to the public they were exhibited in juxtaposition with the large Anemones in their respective classes. The introduction was to such fine varieties as *Mdlle. Cahrol* and *Fabian de Mediana*, so distinct in their character and fantastic in the arrangement of the centre and guard florets that many growers rightly thought that they were quite out of place exhibited in the same class as the more formal florist's Anemones. They at once took the public taste, and many looked hopefully forward to the time when the same strides of improvement would be developed in them as in the other Japanese section, both in colour and size. The time might soon come when prizes could well be offered for stands of twelve, eighteen, or twenty-four distinct varieties, as the case might be, and which would form a very great attraction at an exhibition.

But this hope has not yet been realised, and the prophesied improvements of the Japanese character have not taken place, but quite the reverse. The stock of *Mdlle. Cahrol* and *Fabian de Mediana* seems to have deteriorated, for we seldom see such good blooms of them now as we used to see, and most of the varieties that have been subsequently introduced are so inbred with the formal type, that it is now very difficult to draw the line or explain the difference between them.

It is only a few years since some blooms of the old variety *Emperor* were exhibited at the Crystal Palace in a stand of large flowering Anemones, from which the Japanese type was excluded; being flowers from early buds they had developed an irregularity in the guard florets as is common with that variety, which gave it somewhat a Japanese character, and the stand was disqualified. This caused an outburst of indignation among those that had for a long time exhibited that same variety in the florist Anemone class. This and another variety, *Acquisition*, will develop the same irregular character in the blooms from an early bud. But although with these two varieties the guard or ray florets sometimes show an irregularity the cushion of centre florets retain the true character, a point of very great consideration and distinction in the Anemone classes. For instance, contrast the smooth, honeycomb like florets of a *Fleur de Marie* or *Prince of Anemones* with the rough-toothed florets of a *Mrs. Pethers* or *Lady Margaret*. Although the two latter varieties have splendid guard florets and are large, well built flowers, the ragged centre florets detract from their merit as a florist Anemone, and is a slight development of the character we should look for in a Japanese Anemone, of which I take *Fabian de Mediana* to be a good type.

Some of the more recent introductions of the so called Japanese Anemones are as smooth in their centre florets and as regular in their guard florets as many of the other section. *Mons. Charles Lehocqz* and *Nelson* are very smooth flowers, although perhaps they have not the depth of guard petals as some of the others. *Mons. Pankoucke*, *Sahine*, and *Minnie Chaté* are hybrids that have as much of the one

character as the other. *Ratapoil* and *James Weston* come a little nearer to what we would like to see in the Japanese section, but take them altogether is a very unsatisfactory class, and I would strongly advise societies when comparing their schedules for next season to allow all the large Anemones to be shown together, and make no distinction between them.

This would prevent a recurrence of what we have witnessed this season at the last Crystal Palace Exhibition. Some good stands of blooms of large Anemones were judged, and awarded prizes, and ultimately disqualified when found to contain blooms of *M. Pankoucke* and *M. Chas. Lehocqz*, both classed as Japanese. At Gosport a fine stand of twelve large Anemones was disqualified through containing two fine blooms of the variety *Nelson*. This also is classed as a Japanese Anemone in the National Chrysanthemum Catalogue, and the Gosport Society being affiliated with the National, the flowers were to be judged as therein classified. The exhibitor was undoubtedly to blame for not referring to the recognised guide, but as he had exhibited the same varieties and won prizes at two exhibitions just previous he thought he was acting right. Another instance, my brother writes me from Chertsey that he was disqualified at Egham, and the same varieties took first prize at Staines. There are two or three of the many instances that have taken place this season through the confusion of many varieties that have been introduced, certificated, and classed as Japanese Anemones, and ultimately not developing sufficient of that character as is generally understood from the original type, to distinguish them from many of the other section.

If prizes were in future offered for twelve, eighteen, or twenty-four large Anemones, distinct varieties, without any definition as to section, but let them all be shown together, the advantage to the exhibitor and to the Society would be mutual, and it would avoid any unpleasantness caused by confusion of the sections, which is bound to result in misunderstanding and disqualification.—C. ORCHARD, *Bembridge, I. W.*

CHRYSANTHEMUMS AT CARDIFF CASTLE.

Some of the finest hush plants that I have ever seen were in the gardens at Cardiff Castle this year. Large hushy plants freely flowered are much appreciated for decoration in the Castle beside the large quantities of bloom needed in a cut state for the vases, therefore Mr. Pettigrew finds this system of growing the plants the best for his purpose. What impressed me most were the small pots in which such large plants were growing. Many in 9-inch pots were 4 feet high, nearly as much in diameter, and masses of flowers, making charming specimens. They were arranged in a large span-roof greenhouse, which afforded abundance of light and air to the plants, a decided point in their favour in assisting a free development of the flowers. The plants were well clothed with foliage, showing that they had received the necessary attention to watering during the summer, also with suitable stimulants to obtain so much luxuriance without grossness of either foliage or stems. The plants generally had been topped twice, once when 4 inches high, and again when the shoots resulting from the first topping had extended about 6 inches in length. Afterwards all growth was allowed to remain and all buds to develop flowers. Each plant, therefore, was furnished with from six to ten branches, which threw out many small side growths, which terminated at the point in numerous flowers. Japanese varieties were the most in favour on account of their graceful character and the general brightness of their flowers. Conspicuous amongst many were such as *Madame de Sevin*, *Mdlle. Louise Leroy*, *Fair Maid of Guernsey*, *Florence Percy*, *Madame Baco*, *Mdlle. Lacroix*, *Mrs. J. Wright*, &c.—E. MOLYNEUX.

JAPANESE CHRYSANTHEMUM W. H. LINCOLN.

MESSRS J. LAING & SONS of Forest Hill have given special attention in the past season to new varieties of Chrysanthemums, both imported and home-raised seedlings and sports. It is well known that the Messrs. Laing have been very successful in raising new varieties, for several could be named that have originated in the Stanstead Park Nurseries which now take a foremost place on the exhibition table. That represented in the engraving (fig. 73), *W. H. Lincoln*, is, however, of American origin, though it is likely to become a great favourite, as the colour is a very rich shade of yellow, somewhat like *Jardin des Plantes*, and not too common amongst Japanese Chrysanthemums. The engraving is from a reduced drawing, and represents the bloom about half its full size, as it forms a very handsome flower when developed, the florets twisting and slightly incurving irregularly. One strong recommendation is that the plant is of dwarf habit, about 3 feet high. A first class certificate was awarded for it at the meeting of the National Society on October 15th of the present year.

REVISING JUDGES' AWARDS.

RELATIVE to the competency of judges discovering faults in cut blooms, we have to remember that sometimes all the blooms staged have not been grown by the exhibitors of them. Some have been acquired as gifts, and even less questionable means are not unknown, therefore it is necessary on this ground, if on no other, that there should be power of disqualification any time before the prize money is paid.—ALTER EGO.

[Certainly there should on the grounds indicated; but this is not a question of judging blooms, but of discovering men, if there are any left, who indulge in such practices.]

CHRYSANTHEMUM JOHN LAMBERT.

IN Mr. Molyneux's answer to "West Riding, *Yorks*," page 496, he gives Golden Queen of England as one of the best in his incurves, and

ever seen. I think the same, and shall stick to it for that variety; it incurves so well and is such a deep colour." This was written on November 11th, 1889. Can his opinion be altered so soon, and after the variety appearing in so many first class shows this season in the



FIG. 73.—CHRYSANTHEMUM W. H. LINCOLN.

includes it in his list of the best twenty. May I ask him if he means the old variety of this, or is it the sport he grew for me and is now named and certificated as John Lambert? He wrote me as follows:—"Good judges say that it is the best Golden Queen of England they had

first prize stands, not only shown by the raiser, but by several other good growers as well? I notice in one report of a show in your paper this and Emily Dale Improved were shown as distinct in the first prize stand.—JOHN LAMBERT.



FRUIT FORCING.

FIGS.—Earliest Forced Trees in Pots.—Early Figs are best secured from trees in pots, as a slight warmth at the roots is highly beneficial, but even this has its disadvantages, as when the heat at the roots is 70° or more during the early stages of growth that is forced too rapidly, therefore see that the heat at the base of the pots is not more than that until the leaves are unfolding, when the temperature may be 75°, or even 80° at the base of the pots. The temperature of the house should be gradually increased to 60° at night, 65° by day by artificial means in severe weather, 5° more in mild weather, and 70° to 75° with sun heat and moderate ventilation, closing at 75°; but be careful not to bring on the trees too rapidly, especially in dull weather, as foliage produced under such conditions is not of stout texture, but thin, and liable to scorch under bright sun and to invite red spider. Water in a tepid state must be applied to the roots as required, and the trees and house must be syringed morning and afternoon, so as to have the foliage dry before nightfall, damping the house later in the day if the atmosphere has become dry.

VINES.—Early Forced Vines in Pots.—Fermenting materials in the pits must have attention, and if the pots are placed on pillars frequent additions of fresh material should be made as the heat declines. The heat about the pots must not exceed 70° to 75°, and the temperature of the house must be raised gradually after the buds commence swelling from 55°, so as to have it about 60° to 65° by the time they are coming into leaf, allowing an advance of 5° to 10° by day, carefully admitting a little air at 70°, and close early. Disbud as soon as the bunches can be detected, reserving the most promising. Stop the laterals about two joints beyond the bunches. The laterals proper, or those on the growth of the current year, should be removed up to the bunches, and those beyond allowed to extend as the space permits without crowding, it being essential that the foliage retained have full exposure to light and air, and no more than that encouraged. Usually a couple or three joints of extension in the laterals are sufficient for fruiting Vines in pots, the crop preventing much further extension. Where fermenting materials are employed the necessity for the application of moisture will not be so great as where the heat is obtained solely from hot water pipes. Evaporation troughs should be filled with liquid manure or guano water, 1 lb. of guano to twenty gallons of water, which may be employed for damping the floors after closing the house, or early in the afternoon.

Early Forced Houses.—The buds of Vines started last month now showing signs of swelling, the inside borders should have another good watering at the roots, applying it at a temperature of 80° to 90°, old Vines being accelerated in root activity and in the early swelling of their crop by watering at the beginning of their growths with tepid liquid manure. Avoid making the soil sodden by needless waterings, outside borders will not require watering. Raise the temperature 2° to 3° in the course of a few days, not exceeding 60° to 65° by artificial means until the Vines are in leaf. In quick forcing (which is not generally satisfactory), and where the Vines are thoroughly established and have had a long rest, growth may be induced by a brisk moist heat of 70° to 75°, continuing it until the Vines have fairly started growing, when the temperature should be allowed to fall to 60° to 65°, with 5° to 10° rise in the daytime, it being important whilst the foliage is being made that a moderate temperature be employed, in order to secure short-jointed wood and stout, well-developed foliage. Young Vines that have not been forced will need to be brought down into a horizontal position to insure their breaking regularly. Some well-fermented short stable manure and leaves placed in ridges on the inside border will afford a genial moisture and warmth, and lessen the necessity for frequent syringing. Keep material on outside border replenished with fresh material as may be required.

CHERRY HOUSE.—To have Cherries ripe in April the trees must now be started. Be sparing of fire heat at the commencement, not employing it unless absolutely necessary to maintain the temperature at from 35° to 40° at night and 40° to 45° by day, ventilating when the temperature is about 50° to 55°. Close the house at 50°. Syringe the trees and available surfaces early on fine afternoons, so as to admit of the buds becoming dry before nightfall. The border will be sufficiently moist through the removal of the roof-lights, if not it must have water to bring it into a thoroughly moist state. Trees in pots if at all dry will require repeated supplies of water to secure the thorough moisture of the soil to the base of the pots.

STRAWBERRIES IN POTS.—When the crowns commence swelling, and the trusses of bloom appear, the temperature may be advanced a few degrees by day. A temperature of 50° to 55° at night is sufficiently high for the present. Syringing the plants gently in the early part of fine days will be advantageous. Examine the plants daily, and apply water to all those which require it. Keep a sharp look out for aphides, and if any appear fumigate the house on two consecutive evenings, or

at this time of year it may be practised in the evening and early the following morning. It is absolutely essential that the plants be perfectly free of aphides before the flowers expand, as they are very susceptible of injury from fluctuations in heat and moisture, therefore in fumigating take care to deliver the smoke cool.

More plants should be placed in frames or in a house from which frost is excluded, so that they will be fit to draft into houses as required, but they must not be kept dry, and the pots must be plunged if there is danger from frost, as it is absolutely essential that the roots be kept from damage of any kind. Remove the decayed leaves, loosen the surface soil, and top-dress with horse droppings rubbed through a sieve. The drainage should be attended to, and if necessary rectified, and the pots washed. The plants may be introduced during the next three weeks to a Peach or to a Strawberry house if one be available. La Grosse Sucrée, Vicomtesse Hericart de Thury, Noble, Auguste Nicaise, Sir Harry, and President are suitable varieties. Sir Joseph Paxton in some places is very liable to mildew, but where it succeeds it is one of the best forcing varieties started at the new year and afterwards. Plants for introducing later on will be quite safe in their quarters out of doors plunged in ashes to the rim, and a light covering may be given of dry fern or litter in severe weather, removing it in mild weather.

KITCHEN GARDEN.

SOWING PEAS.—All who own gardens are anxious to have Peas ready for gathering at the earliest possible date in spring. We have found that October and November sowings give early plants, but these plants are often checked, and by March more backward than they were in December. The December sown Peas are of a different stamp. Sown about the middle of the month the plants appear in January, are a few inches high in February, and by March they are in fine order to advance with the improving weather. These Peas will bear sooner than any that can be raised in spring, except under glass. South borders well exposed to the sun should be chosen for sowing Peas in December. They should have moderately rich and very firm soil, and the rows should be 8 feet apart, as when one row shades the other podding will be retarded many days. Only the earliest round-seeded sorts should be sown in winter. We have formed trenches, and sown in these thinking they would afford shelter, but the young plants suffered more from the damp confined in these than they did by the greatest exposure. We do not sow any of the early dwarf Peas at this time, but prefer those which are not less than 3 feet in height.

BROAD BEANS.—The above remarks also apply to these, but the very long podded sorts are useless for sowing as a first crop. They do best in a somewhat stiff, but not a wet soil, and the seed should be sown a little thicker now than in summer.

MUSHROOMS.—The severe weather is retarding the cool beds, but it has not caused them to cease bearing, not even in an open shed, where the temperature is only a few degrees more than in the open, but all beds in a heated house should have a thick coating of litter in cold and frosty weather. This not only increases the temperature in the bed, but prevents the surface from drying, which is very important. All beds should be so covered whether they have come into bearing or not. Continue to collect material and form beds as fast as possible, as the demand for Mushrooms is now unlimited, and a profusion of them will cause a scarcity of other vegetables to be less felt.

FROST AND VEGETABLES.—Our thermometer registered 10°, 13°, and 15° on three successive nights. This has caused green vegetables to shrink very much. Fortunately we had cut and stored all the Broccoli that showed heads amongst the foliage, and we have as many of them in a shed as will last over Christmas. This is a great advantage. Endive and Lettuce are destroyed in the open, but those in frames which were covered with mats are sound. Winter Spinach has suffered, but although the plants appear much injured, they will produce a bountiful supply in April and May. The tops of Celery have suffered a good deal, but the part under the soil is quite sound. To prevent the frost from injuring this crop a quantity of straw, hay, or bracken should be thrown lightly over the top of the ridge, and this may be removed when the weather is mild.

ROOTS FOR PRESENT USE.—Parsnips, Salsafy, and Jerusalem Artichokes may now be used. We do not send many of them to the kitchen so long as there is a good variety of other vegetables, but prefer to keep them in reserve for times of scarcity. Unfortunately the Parsnips are very much rusted on the crowns this season. This we attribute to the excessive dampness of the soil, and we have no cure for it. The decayed parts are cut off before the roots are sent into the kitchen. The Salsafy always remain sound during the winter, and is most useful. We dig up a quantity of roots when frost is anticipated, but allow the bulk to remain in the ground, and dig them as required. The Jerusalem Artichokes are treated in the same way, and they too are most useful, as they are extremely hardy, and never diseased, while they can be used in a variety of ways in the kitchen. This is a winter vegetable deserving of more extended culture, and should be grown in all small gardens.

TURNIPS.—We have had to supply some cooks that objected to Swedish Turnips, but fortunately our present one does not, and there is no difficulty in keeping up a supply in the hardest of weather. White and yellow Turnips that have attained a large size do not keep so well during frost as small bulbs, and all that have attained a good size would be better pulled up and stored in a cool shed. Chirk Castle, the best of

all white-fleshed winter Turnips, does not require this treatment, as the bulbs naturally bury themselves so deep in the soil that they are never injured by frost.

FORCING ASPARAGUS.—We place our first roots in on November 15th, and cut the first dish on November 29th. We find the roots force very freely and yield heavily. It is a much valued vegetable at all times, more especially at midwinter, and the dates given show that it can be produced in a fortnight or thereabouts; that in question was forced in a bed of a Cucumber pit with a bottom heat of 80° and a top temperature of 65° to 70°. All who can command these temperatures will readily secure Asparagus; strong fully matured crowns only should be forced. A few leaves may be placed under them with the roots packed close together, and a layer of soil to the depth of 3 inches on the top. We have forced the roots on ordinary hotbeds, but not so quickly or successfully as in the pits, particularly at midwinter. The roots are of no further use after being forced and should be thrown away. Two dozen good roots will give several dishes, and for maintaining a constant supply the requisite number of roots should be put in every fortnight.

PLANT HOUSES.

Selaginella Krausseana.—Where these are appreciated for the margins of groups and other decorative purposes some 3 to 5-inch pots may now be made up. The pots should be filled a little above the rim with any light compost in which leaf soil forms nearly one half, small pieces pricked evenly over the surface. The smaller the pieces and the closer they are dibbled in the better they succeed, and the sooner they cover the surface. If the moss is taken from a cool house it will commence growing freely in a vinery or Peach house that is kept about 50°. The moist atmosphere of the former will suit the best. Other small growing varieties may be treated the same.

Panicum variegatum.—Cuttings of these may be inserted thickly together in 3-inch pots and placed in handlights in a warm house. They will soon be rooted and ready for decorative purposes early in the season. Few plants form a neater or more effective margin to a house of Palms or other foliage plants than these; a few plants dotted here and there are not particularly pleasing, but a good row adds materially to the appearance of the structure.

Gardenias.—Young plants that were rooted in thumb pots some time ago should be placed at once into 3-inch pots. They will continue to grow slowly, and will be ready for 5-inch pots early in the season. Keep the young plants in a temperature of 60° to 65°. Pinch the points out of the shoots to induce them to branch.

Veronica Andersoni variegata.—For large conservatories where flowering plants do not do well this will be found a useful plant during the winter months. Soft growing shoots will root freely now if inserted in sandy soil and placed in handlights in a heated structure. In one season they will grow into nice bushy plants if potted on, as they need root room and their shoots are pinched occasionally. They are also very effective grown as small standards with legs about 18 inches high. They grow into decorative plants quicker than *Euonymus latifolia variegata*, and are nearly as effective amongst other plants.

Libonias.—Where good plants of these are appreciated 1 foot high and as much through them, cuttings should be rooted early. If one or two plants are cut over now and placed into heat they will soon produce good cuttings, which should be inserted and rooted at once. If potted on as they need root room, and the shoots pinched occasionally until the plants are placed into 5 and 6-inch pots, they will be fine bushes by autumn, and if well ripened they will flower profusely.

Solanums.—To do these well cuttings should be rooted early. To obtain these, introduce a plant or two that has not berried well into heat to induce growth. Soft-growing ends should be taken off and inserted into sandy soil and potted singly as soon as they are rooted. The shoots should be pinched from time to time, and the plants repotted until they are placed into 5 or 6-inch. Grow them inside in an intermediate temperature until May, then gradually harden and place them in frames.

Cyperus distans.—Plants raised from seed sown some time ago and pricked off into boxes may be placed into 3-inch pots. Grow them on in a temperature of 50°, if kept too warm they draw up weakly. Plants that have flowered may, if wanted, be cut over and placed in heat, they will soon throw up again from the base and be useful for groups. They never make such good plants as those raised from seed. Seed may be sown on the surface of a pan of fine soil and placed in heat. If well watered and covered with a square of glass germination will soon take place. If the seeds are covered with soil they are a long time before they germinate, and often fail to do so if buried too deep, unless they are brought again to the surface.

Grevillea robusta.—Plants that have become damaged may be cut close back to the surface of the soil. If placed in a temperature of 50° they will soon break again into growth, and make good plants long before those raised from seed. They can be grown on with two or three shoots if preferred to those with a single stem. The latter are best for most purposes, and if the roots are carefully reduced after they have broken into growth and the plants repotted, they will grow rapidly after they are once started. Plants of *Aralia Sieboldi* that have become bare may be subjected to the same treatment, while the head may be taken off where the wood is soft, and re-rooted under a bellglass in heat.



APIARIAN NOTES.

THE WEATHER.

FEW if any dead bees lie about, unlike 1889, after the first spell of frost, when at some hives a few were carried out. Being all well covered and provided with stores there will be no apprehension that any will either succumb to the cold or from want, although the weather may become severe. Snow being the greatest enemy when the temperature rises above freezing, attention must be paid to closing the entrances and lowering the ventilators. So long as the temperature keeps under 30° they will be left undisturbed.

SECTION CRATES.

For some years I have been using a contrivance for sections that pleases me so well that may now be given to the public. It possesses all the advantages claimed for the working of sections. They can be removed *en masse* from the case when full, and as they can be pressed firmly and closely together by blocks propolis is reduced to the minimum, and as these blocks are easily slackened the removal of the sections become easy. By placing the crate containing them upon a loose board a little less in size than the inside crate upon a box of the same dimensions the crate is pushed downward telescope fashion, and sections are left upon the top ready to be examined, and removed to a place of safety. The device is simply a piece of tin the exact length of the inside of the crate, and about 1½ inches broad; both edges are folded a quarter of an inch, and then again doubled; this gives extra strength, and the right distance between top of the hive and the bottom of the section. A strip of tin about an inch deeper than the crate is soldered to the under side of the bearer, allowing half an inch for that purpose, and the other half inch is turned at right angles at the other end to form an "ear" for resting upon the top edge of the crate, which should be sunk at each rest the thickness of the tin, so that the upper edge is level. These end pieces should also have their edges turned.

The crate is simply an outer rim of the desired size, and about three-eighths of an inch deeper than the section. It will be observed these rests suit any size of section, and from one to any number can be wrought upon any hive, as in one compartment, and the tins are cheap, and can be made by anyone. If a small staple be driven underneath the rest at the bottom and side of crate it will keep them in place, and will not interfere with the easy removal of sections.

SHELTER FOR HIVES.

The bee-keeper and the beginner should, as in other matters, have the stand and shelter prepared beforehand, that is before swarms appear. There are many forms of cases and houses for bee hives already described which may be left to the choice of the individual. The following is not an expensive shelter, and is lasting, and is meant for three or four hives. Four scantlings for corner posts, 2 feet 3 inches by 3 inches by 3 inches. For the front from say 7 feet to 8 feet long is a suitable size for three or four hives, and from 2 feet 6 inches to 3 feet wide, which the bee-keeper may determine for himself, and which must be the length of the scantlings, 3 inches by 1½ inch. The top scantling or the wall plate should be half checked, so that it may be flush on the top, the roof to have a slight hang to the back, it being of corrugated galvanised iron. Two scantlings, 2 inches by 2 inches, are all the framing required. These are held to the iron by screws, is hinged to the wall plate, and rests upon the posts at the back, and held down by a hook and eye. When a square frame has been formed by nailing two scantlings on the ends of two posts it is finished, unless the bee-keeper has a mind to put in struts and diagonals. Now nail the top plate of the ends as described to the front, but

the under one may be nailed on the under side without checking. After this put in the back posts. When completed will form two right angles, or a front and two ends.

To fasten this place in charred and tarred posts in the ground at each end, inside of upper corner parts of frame, bore holes in the under plate, and nail firm to the posts in the ground, the back ones being the lowest for drip, if this is done accurately will bring end portions right which may be strutted or not. Having the posts in the ground separate from the framework, and kept back from the corner, enables the bee-keeper to renew these posts easily when required without interfering with the framework, which lasts longer than ground parts do.

Sheets of plain galvanised iron held by a few round-headed screws are all the fastenings required. I have omitted to say the bottom of the shelter should not be lower than will show 3 inches of hive from top of landing-board. It will be seen that the shelter is simply a small shed open at bottom, and without a back. Doors may be added, but all I recommend is a curtain of some cheap material.

It depends greatly where these shelters are situated as to the uses they may be put to. They may be as high again as advised above. Near fruit plantations newly gathered fruit may be packed and temporarily stored beneath them, and being portable may be moved about to shelter workers from rain. If ground is valuable flowers or fruit bushes may be trained, and handy for gardeners to shelter Chrysanthemums for a frosty night when a pressure of work is on.

If fruit is to be grown on them get a few iron studs about 3 inches long, having a hole in one end and the other pointed to drive into the angles, and stretch wires across or wire netting to train Currant or Gooseberry bushes to. The roof being almost flat will be handy at times to dry herbs. The structure, although not ornamental, is neat enough for shrubberies or even the flower garden. Its utility recommends it.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUE RECEIVED.

G. Shrewsbury, 36, Gray's Inn Road, London.—*Price List of Hot-Water Apparatus.*

R. Owen, Maidenhead.—*Catalogue of Chrysanthemums.*

H. & F. Sharpe, Wisbech.—*List of Seed Potatoes.*

Foster & Pearson, Beeston, Notts.—*Catalogue of Horticultural Buildings and Heating Apparatus.*

Sutton & Sons, Reading.—*Amateurs' Guide in Horticulture, highly Illustrated.*

James Veitch & Sons, Royal Exotic Nursery, King's Road, Chelsea.—*Illustrated Seed Catalogue for 1891.*



All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Carpet Bedding Plans.—If you desire designs for copying you will find several in the "Parks and Gardens of London," published at this office, post free for 2s. 11d. There are also some good ones in a small manual prepared by Mr. A. Graham, Hampton Court Gardens,

Kingston-on-Thames; but we do not know whether he has any copies left or not. If you wish to learn geometrical drawing you will find lessons in Cassell's "Popular Educator," which you can obtain through a bookseller.

Gardenias in Winter (W. R. S.).—If the plants are swelling their flower buds they must not be kept in a lower temperature than 65°. Be careful not to give too much water, this will bring about deformity of the flower buds. If carefully supplied with water the same temperature as the house, and artificial manure is applied in small quantities to the surface of the soil at intervals of two or three weeks, the roots will continue active, and the flower buds develop naturally. Those that are first showing their flower buds and intended for spring flowering will do very well in a temperature 5° lower, provided they are not kept too wet at their roots. Young plants in 2-inch pots intended for growing on early in the year should be placed in the first-named temperature so that they can be kept slowly advancing. Pinch out the points of the plants to prevent their running up tall. Keep these plants close to the glass, but be careful that the soil does not become dry about their roots.

Growing Chrysanthemums (Mum).—Nine-tenths of the blooms that win prizes at exhibitions are produced by plants that are not topped at any time, though many growers top some of their plants once in spring, with the object of retarding the formation of the buds of varieties which are apt to show too soon. As you intend "making your first start" as an exhibitor next year you can scarcely expect to defeat experienced men in a forty-eight class, and if you succeed in doing so you will deserve much credit for the achievement. Most persons commence by showing in the smaller classes; still, if you produce sufficient first-class blooms for the larger by all means enter in those classes if you wish to do so. Manures have different effects in different soils, and no one kind can be said to be the best for all. You should read attentively Mr. Molyneux's and Mr. Iggulden's works on Chrysanthemum culture, both of which can be had from our office, the former for 1s. 2d., the latter for 9d., post free. The foregoing reply was in type awaiting publication when your second letter arrived. You can ask as many questions as you like, and answers will be readily given as soon as practicable. We answer all that we receive, but we cannot help letters being occasionally lost in the post; these accidents, however, seldom occur when the addresses are sufficiently full, and plain for delivery.

Rose Climbing Devoniensis (J. J. T.).—The following description of the Rose you name was given by W. R. Raillem in this Journal early in the current year. It gives the exact information you require. "(Pavitt, 1858).—I have not noticed the climbing sports of the H.P.'s, as they seem to me to be of little practical value, since the blooms are generally inferior to the type, and better pillar and wall Roses are to be found among the Noisettes, Gloire de Dijon, Ayrshire, Evergreen, or Banksias. Some nine or ten are catalogued, and oddly enough they are mostly sports of varieties which have quite a short growth naturally. This Tea Rose, however, "out-herods Herod" in differing from the Devoniensis type, which (as we have seen) is of quite moderate growth, but the climbing variety is the strongest, most untidy, and irregular grower we have. Growing is its strong point, and it sometimes nearly omits the flowering part of the business altogether. A strong long shoot of the Gloire de Dijon or Noisette races, if laid in well and uninjured by frost, will bloom freely all up the rod. But not so Climbing Devoniensis. Away it goes again (if well treated on a south wall) from the top bud of last year's shoot, and its sole endeavour seems to be to get to the top of the wall as quickly as possible, and as a plant to look as bare at the base, ugly, and lopsided as it can. The great pithy, thorny, flowerless shoots are very susceptible to frost, and are not handsome at any time. But I have seen it show better manners, growing moderately and blooming freely throughout the summer on a south wall, where no attention was paid to it; and I believe this desirable state of affairs was attained by simple starvation, but the buds were small, and only useful as passable buttonholes."

Mixed Laburnum (A. E.).—Your designation of the tree leads us to suppose that you refer to a Laburnum bearing both yellow and purple flowers. We have seen many of such trees, the variety being known as Cytisus Adami. In all probability this was originally produced upwards of fifty years ago in budding Cytisus purpureus on the common Laburnum. In this process it is supposed that a cell of the one species became divided and united to a cell of the other, and the result has been a plant producing not only flowers of each species separately, but others partaking of the characters of both. There are other instances in the vegetable kingdom in which a similar union of cells is believed to have taken place, but Cytisus Adami is the best known and best established. Mr. Fish has added the following interesting notes on the subject:—"The changes produced on the Laburnum when grafted are sometimes wonderful and wholly unaccountable. We have rarely seen the common or Scotch Laburnum sport into other varieties. We recollect of only one instance in which flowers of purpurascens appeared. But if you graft either of the Laburnums with Cytisus purpureus or Cytisus supinus, the vagaries which sometimes take place are astonishing. A small standard of Cytisus alpinus was grafted with Cytisus purpureus, and on the same branch will sometimes be found small pieces of yellow and purple, and at the very point strong shoots of the Cytisus alpinus, the 'blood' of the stock finding its way through the more weakly growth of the scion. What is remarkable is, that grafting or budding with one variety will frequently, as the plant grows, present you with three or four varieties."

Utilising Houses and Pits (Market).—The unheated greenhouse may be profitably used for growing Grapes, Chasselas Vibert, Foster's White Seedling, Black Hamburg, Black Prince, and Trentham Black are suitable varieties; and in winter the house would form an admirable place for Mushrooms on the cool system in no way interfering with the resting of the Vines, the Mushrooms being quite safe with efficient protection. As there is a bed in the centre and at the sides this arrangement may be inconvenient, therefore it may be used for Strawberries in pots, which will come in fully a fortnight to three weeks in advance of fruit from outdoor plants. Noble is a profitable variety to grow. The Strawberries could be followed by Tomatoes, having the plants raised in other structures, so as to be strong for planting out in May. In winter the house could be utilised for Christmas Roses (*Helleborus niger* and its varieties), also Marie Louise Violets, both being over by the time of introducing Strawberries. There is another purpose to which the house could be put—viz., Peaches, but that would preclude the house being used in winter for other purposes. Dagmar, Crimson Galande, Stirling Castle, Dymond, Prince of Wales, and Sea Eagle are excellent varieties for a cool house and market, being good in colour or size and pack well. Of course, the house could be used for Cucumbers in summer and Mushrooms in winter. You will find "Mushrooms for the Million" useful if you embark in their culture. The other house is not heated sufficiently for the growth of Cucumbers in winter or even in spring, but it might be used for them or Tomatoes in summer, one being about as profitable as the other; and in winter it would answer admirably for Mushrooms, which well grown are decidedly profitable. You may also grow Chrysanthemums, good blooms of late white varieties being remunerative. Another plan is to grow Grapes of the late keeping varieties, but that would preclude anything else; and an alternative plan is to grow midseason Grapes, utilising the house in autumn for Chrysanthemums. No. 1 pit is suitable for Cucumbers and No. 2 pit for Tomatoes, which may be followed in the autumn by Mushrooms or Violets. The disease in the Cucumbers and Tomatoes is identical. Add a good handful of superphosphate of lime to every bushel of your turfy loam, and if obtainable about a fourth of clay marl, dried, pounded, and mixed with the soil. These additions may not save your plants from the disease, but they will render their tissues firmer and less liable to attack and severe injury.

The Costard Apple (M., Hants).—This Apple is described in the "Fruit Manual" as follows:—"The large oblong five-ribbed and five-sided Apple, with a green skin and sometimes a brownish tinge on the side next the sun, an open eye and short stalk, is no doubt synonymous with the Catshead, and this accounts for George Lindley saying they are the same variety. But there are two other varieties of Costard which are undoubtedly distinct, and these are the Herefordshire or Dadnor Costard and the Gloucestershire Costard, which will be found described under these names. The Costard is one of our oldest English Apples. It is mentioned under the name of 'Poma Costard' in the fruiterers' bills of Edward I. in 1292, at which time it was sold for a shilling a hundred. The true Costard is now rarely to be met with, but at an early period it must have been very extensively grown, for the retailers of it were called Costardmongers, an appellation now transformed into costermongers. It is mentioned by William Lawson in 1597, who, in his quaint style, says, 'Of your Apple trees you shall finde difference in growth. A good pipping will grow large, and a Costard tree: stead them on the north side of your other Apples, thus being placed, the least will give sunne to the rest, and the greatest will shroud their fellows.' Modern authors make the Costard synonymous with the Catshead, chiefly, I think, on the authority of Mr. George Lindley, who has it so in the "Guide to the Orchard;" but this is evidently an error. All the early authors who mention both varieties regard them as distinct. Parkinson describes two varieties of Costard—the 'Gray' and the 'Greene.' Of the former he says, 'It is a good great Apple, somewhat whitish on the outside, and abideth the winter. The Green Costard is like the other, but greener on the outside continually.' Ray describes both the Catshead and Costard as distinct, and Leonard Meager enumerates three varieties of Costard in his list—the white, grey, and red. Some etymologists, and Dr. Johnson among the number, consider this name to be derived from *Cost*, a head; but what similarity there is between this Apple and a head, more than in any other variety, must puzzle anyone to discover. Is it not more probable that it is derived from *Costatus* (*Anglice*, costate, or ribbed), on account of the prominent ribs or angles on its sides? I think this a much more likely derivation."

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*A. B.*)—1, *Nec plus Meuris*; 2, Not known, and worthless; 3, *Jersey Gratioli*. The Apple is not in a condition to be named, indeed none of the fruit display the true character of the varieties. (*E. Price*).—Pears: 1, *Chaumontel*; 2, *Josephine de Malines*. Apples: 1, *Flower of Kent*; 2, *New Hawthornden*; 3, *D'Arcy Spice*.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once,

and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*G. P.*)—1, *Selaginella Martensi*; 2, *Selaginella caulescens*. We cannot undertake to name *Croton* and *Dracaena* leaves. (*D. L.*)—It is a neat little flower of the *Odontoglossum maculatum* type. It is worth preserving, for as the plant becomes stronger the flowers may improve.

COVENT GARDEN MARKET.—DECEMBER 17TH.

No alteration in prices. Business somewhat better. Hothouse goods in fair supply.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, $\frac{1}{2}$ sieve	1	6	to	6	0	Lemons, case	20	0	to 28 0
" Nova Scotia and						Melons, each	1	0	2 0
Canada, per barrel	15	0		23	0	Oranges, per 100 ..	4	0	9 0
Grapes, per lb.	0	9		3	0	St. Michael Pines, each..	2	0	6 0
Kentish Cobs	65	0		70	0	Strawberries, per lb. ..	0	0	0 0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes, dozen ..	0	0	to	0	0	Mushrooms, punnet ..	1	6	to 2 0
Beans, Kidney, per lb. ..	0	6		0	0	Mustard & Cress, punnet	0	2	0 0
Beet, Red, dozen	1	0		0	0	Onions, bushel	3	0	4 0
Brussels Sprouts, $\frac{1}{2}$ sieve	1	9		2	0	Parsley, dozen bunches	2	0	3 0
Cabbage, dozen	1	6		0	0	Parsnips, dozen	1	0	0 0
Carrots, bunch	0	4		0	0	Potatoes, per cwt. ..	3	0	4 0
Cauliflowers, dozen ..	2	0		4	0	Rhubarb, bundle	0	2	0 0
Celery, bundle	1	0		1	3	Salsafy, bundle	1	0	1 6
Coleworts, doz. bunches	2	0		4	0	Scorzoneria, bundle ..	1	6	0 0
Cucumbers, doz.	2	0		3	6	Seakale, per bkt. ..	2	0	2 6
Endive, dozen	1	0		0	0	Shallots, per lb. ..	0	3	0 0
Herbs, bunch	0	2		0	0	Spinach, bushel	1	0	2 0
Leeks, bunch	0	2		0	0	Tomatoes, per lb. ..	0	4	0 8
Lettuce, dozen	0	9		1	3	Turnips, bunch	0	0	0 4

CUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	4	0	to	8	0	Mimosa (Each.) per bunch	0	9	to 1 0
Bouvardias, bunch	0	6		1	0	Narciss (Paper-white),			
Carnations, 12 blooms ..	1	0		2	0	French, doz. bunches ..	4	0	10 0
Chrysanthemum, 12 blms.	1	0		3	0	Do. Do. English,			
" 12 bunches	3	0		9	0	per bunch	1	0	1 6
Epiphyllum, doz. blooms	0	4		0	6	Pelargoniums, 12 trusses	1	0	1 6
Eucharis, dozen	3	0		6	0	" scarlet, 12 bunches	4	0	6 0
Gardenias, 12 blooms ..	6	0		9	0	Poinsettia, dozen blooms	4	0	9 0
Hyacinths (Roman), doz.						Primula (double) 12 sprays	0	6	1 0
sprays	0	6		1	3	Roses (indoor), dozen ..	0	6	1 0
Lapageria, 12 blooms ..	2	0		4	0	" Red, 12 blooms ..	1	0	2 0
Lilac (French) per bunch	5	0		7	6	" Tea, white, dozen ..	1	0	3 0
" longiflorum, 12 blms.	4	0		6	0	" Yellow	3	0	5 0
Lily of the Valley, dozen						Tuberose, 12 blooms ..	0	4	0 9
sprays	3	0		6	0	Tulips, per dozen	1	0	2 0
Maidenhair Fern, dozen						Violets (Pamre)	3	0	4 6
bunches	4	0		9	0	" (dark)	1	6	2 6
Marguerites, 12 bunches	2	0		6	0	" (English), doz. bunch	1	0	2 0
Mignonette, 12 bunches ..	3	0		6	0	Wallflower, doz. bunches	3	0	6 0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Aralia Sieboldi, dozen ..	6	0	to	12	0	Hydrangea, doz. pots ..	9	0	to 18 0
Arbor Vitæ (golden) doz.	6	0		8	0	Lilium lancifolium, doz.	0	0	0 0
Chrysanthemum, per doz.	6	0		24	0	" longiflorum, doz.	0	0	0 0
Climbing Plants, various,						Lily of the Valley, per pot	4	0	6 0
dozen pots	4	0		9	0	Lobelia, per doz.	0	0	0 0
Dracaena terminalis, doz.	24	0		42	0	Marguerite Daisy, dozen	6	0	12 0
" viridis, dozen	12	0		24	0	Mignonette, per dozen ..	4	0	6 0
Epiphyllum, per dozen ..	12	0		30	0	Musk, per dozen	0	0	0 0
Erica, various, dozen ..	12	0		18	0	Myrtles, dozen	6	0	12 0
Euonymus, var., dozen ..	6	0		18	0	Nasturtiums, dozen pots	0	0	0 0
Evergreens, in var., dozen	6	0		24	0	Palms, in var., each ..	2	6	21 0
Ferns, in variety, dozen ..	4	0		18	0	Pelargoniums, per doz. ..	0	0	0 0
Ficus elastica, each ..	1	6		7	0	Poinsettia, per doz. ..	9	0	15 0
Foliage plants, var., each	2	0		10	0	Rhodanthe, per dozen ..	0	0	0 0
Fuchsia, per doz.	0	0		0	0	Stocks, per doz.	0	0	0 0
Geraniums Scarlet, p. doz.	2	0		6	0	Tropæolums, various, per			
Hyacinths (Roman), doz.						dozen	0	0	0 0
pots	8	0		10	0	Tulips, dozen pots	8	0	12 0



BUTTER MAKING.

We were pleasantly reminded that we had written nothing on this subject for some time by an able address before the Northamptonshire Chamber of Agriculture given recently by Mr. T. Nuttall of Beeby, Leicester, the well known veteran lecturer on dairy farming. The address was so practical and the teaching so incisive and clear, that the chief points may be usefully recounted here for the benefit of our readers.

At the outset it was insisted upon that the rule of thumb system must be abolished in dairy farming, and every practical detail mastered and reduced to a sound system which would render failure practically impossible and raise the quality of our dairy produce to the highest standard of excellence. That British dairy

produce is very far below this was shown by the fact that at the present time foreign cheese and butter realised 25s. per cwt. more than home produce in our markets. The dealers assert positively that no dependance can be placed upon English butter, for it is never two weeks alike and its keeping qualities are very low. With us the fault is a want of thoroughness or a clinging to rule of thumb, and slowness to obtain that thorough dairy education which is now possible. As the County Council meeting at Leicester saw their way to voting £300 for agricultural education there can be no reason why similar aid should not be forthcoming generally, and it will be if asked for.

Turning to cows, it was well laid down that the milk of each cow should be subject to a frequent test, as it is quite certain very many cows are not worth the food they eat. If a cow does not give more than 500 gallons she is not worth keeping. We put it plainly to home farmers. Do you apply any sort of test as to the quantity or quality of milk of individual cows? Hardly ever do we see a herd of cows without inferior animals greatly predominating, and yet they cost just as much to keep as the good ones. Only a few hours before sitting down to write this paper we watched a herd of Leicestershire cows being foddered out on an open pasture, with a bitter east wind blowing fine hard snow across the pasture; a small quantity of hay was thrown about the pasture out of a cart, each cow not getting more than a few handfuls, as the farmer wished to compel them to eat down the old fog left upon the pasture, and remember this foddering at midday had to suffice for the whole twenty-four hours. Well, the cost of food was reduced to a minimum there, and we suspect the returns were very much in proportion to it. The owner of the herd milks twenty-five of them, and he would certainly find it more profitable to reduce the number of his cows by half, to adopt a more liberal dietary, and an altogether more humane method of treatment.

The importance of cleanliness in every way was fully entered into by Mr. Nuttall, and he also laid stress upon the kindly treatment and thorough milking of the cows, the last of the milk in the udder always being the richest. He recommends the use of glass test tubes in all dairies; but for large dairies we strongly advise the use of the Victoria milk tester which we recently described, as being altogether more reliable and sure. In describing his own process he explained that he allowed the cream to ripen for about thirty-six hours, and put 1 lb. of salt to every 10 lbs. of cream. That quantity of cream which unripened would yield 8 lbs. of butter would, if properly ripened, yield 9 lbs. It was impossible to get rid of the caseine until the cream had time to ripen, and butter will never keep well if the caseine is not got rid of. He explained that this use of salt in the cream did nothing but good and did not affect the freshness of the butter, as all the salt was taken away in the buttermilk and caseine. To keep butter well not only must the whole of the caseine be removed from it, but no salt be put into it. This refers more especially to butter not intended to be used at once, or in a few days after it is made. It is put down in pans or jars, and salt water placed over it and changed once a fortnight. When the butter is taken out for use salting is done by using a brine consisting of 2 lbs. of salt to a gallon of water.

Much stress was laid upon the churning. The churn should be cleansed first with cold, then with hot, water the day before using using salt for the scouring instead of soda, which ought never to be used for a churn. The butter should be churned at 54°, and then allowed to rise to 65°. The churn should not be turned at a great speed, thirty-five times per minute being a safe rate of speed. If the churn was without dashes it might be turned forty-five or fifty times per minute. Mr. Nuttall asserted that he had butter made twelve months since, and it was as good now as it was when he put it down, as it had no caseine in it, and nothing could attack pure butter fat.

The sum and substance of the lecture was really systematic

practice based upon the teachings of science. The entire work of butter making is purely mechanical, and strict attention has only to be given to the necessary points and to thorough cleanliness to ensure butter of uniform excellence. Where this is not striven for in the right way it is far better not to attempt butter making at all, but rather to dispose of the milk to a factory or dealer, and so avoid the certain loss of attempting to sell inferior butter. We do not advise such a course, but would rather urge upon every dairy farmer the importance of better practice, and of being satisfied with nothing short of butter of the highest quality always.

WORK ON THE HOME FARM.

Now that the cows are settled down in the yards for the winter especial attention must be given to keeping up the quality of the dairy produce for the house, that being an especial test of good management for the next two or three months. With nothing but "stale" cows the difficulty is much increased, but with a cow calving every fortnight it becomes comparatively an easy matter to have plenty of good butter. We avoid artificial colouring altogether, and always regard with a suspicious eye fresh butter in midwinter with the rich golden colour of midsummer butter. The latter is natural, the former is artificial, and does not please the eye for that reason. Butter pure and unsophisticated at this season of the year is of pale colour even from Jerseys, but is nevertheless very palatable. With plenty of the best hay as the chief thing, and some bran, Carrots, and Cattle Cabbage, pure water, and access to rock salt, there can be no taint in the milk from the food. See that no cow with a morbid appetite has access to foul stable litter, of which it may partake greedily, and so spoil its own milk and that of any other cow mixed with it. Next to careful feeding and cleaning of cow houses comes cleanliness in milking. Clean hands are just as important as clean pails, and we not only take care to provide the milkers with means of washing in the cow-house, but see that they use them. It requires a little time to get men into habits of thorough cleanliness, but once acquired the habit of washing before milking clings to them.

Calves are now taken altogether from the cow after the first day, and are fed with milk from a stale cow, as the fresh cow's milk cannot be spared. The calves have very snug quarters in a separate compartment, with good light and ventilation, but quite closed. Older calves are also kept altogether, shut in for the winter, and are well fed upon a mixed dietary of chaff, crushed oats, bran, and a little of the compound Waterloo round cake with milk, according to the age of the calves. Such a dieting is ample, and care is taken not to overdo it. Our aim is to promote free growth and lusty condition without forcing the young stock on so fast as to incur any risk of loss from black leg. We find our care well repaid by the healthy, thriving condition of the stock, and very rare indeed is it that any sickness or loss occurs among them. Where young stock have not such care, and are left out on pasture exposed to the weather, with just a bit of hay once a day, how frequently during winter does one hear of another stirk being bad, and then of its speedy death. The wonder is how invariably this goes on every winter on Midland pastures, without any effort at a radical change in winter management.

OUR LETTER BOX.

Roots for Exhibition (H. R. W.).—We have received your letter. The requisite information cannot very well be compressed into the form of a brief reply. Rich deep soil with liquid manure and heavy manurial mulchings in summer are the chief essentials to success. The subject shall have further attention.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain	
1890. December.	Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min.	In sun.	On grass		
Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.		
Sundday	7	30.142	35.4	33.2	E.	38.9	33.1	33.4	45.8	28.1	—
Monday	8	29.962	33.6	31.1	S.E.	37.9	36.0	32.6	37.3	26.3	—
Tuesday	9	30.071	34.8	34.1	N.E.	37.8	37.9	31.4	39.8	25.2	—
Wednesday	10	30.206	29.1	29.0	N.E.	37.4	33.7	27.2	42.6	23.7	—
Thnrdsday	11	30.198	27.4	27.4	N.E.	37.0	32.8	22.9	32.2	24.0	—
Friday	12	30.149	25.0	24.8	N.E.	26.6	32.9	22.3	41.9	17.7	—
Saturday	13	30.135	24.8	24.8	N.E.	36.0	30.0	21.9	30.0	16.3	—
		30.123	30.0	29.2		37.4	34.5	27.4	38.5	23.0	—

REMARKS.

7th.—Fair, with a little sun in afternoon.
8th.—A sprinkle of snow early; fair day.
9th.—Overcast day; misty evening.
10th.—Fog early; sun shining through slight fog from 10 A.M. till 3 P.M.; fog again in evening.
11th.—Fog till about 11 A.M., then clear, but slightly foggy all day.
12th.—Slight fog early; bright sunshine from 11 A.M.; fair afternoon and evening.
13th.—Fog early; bright sunshine from 11 A.M.; clear evening and night.
A very cold week, temperature quite 12° below the average. No rain or snow.
— G. J. SYMONS.



CHRISTMAS SUPPLIES.

PERHAPS in no better way can an adequate idea of the enormous population and great extent of London be formed than by visits paid to the principal markets at times when the demands and supplies are specially large. Every season possesses particular characters, but it is doubtful if at any period the general supplies are so remarkable as in Christmas week. The spring months and during the London season are distinguished by greater abundance of flowers; the early summer gives wonderful quantities of soft fruits, especially Strawberries, followed later by the Cherries and other stone fruits; while in the vegetables we have Peas contributing for some weeks a special feature of much interest. These are, as it were, only episodes in the market history of the year. At Christmas there is a concentration of supplies, the home productions being largely increased by the importations from other countries, for that great inducement—the best prices—are then obtainable for all seasonable produce of good quality. So it is that no better time can be selected for a visit to a representative market, not only in the metropolis, but in any of our chief provincial towns, where these emporiums have developed considerably in recent years.

Covent Garden Market is rightly regarded as one of the best and most characteristic establishments of its kind to be seen in Great Britain, for there can be found at any season the choicest productions of the vegetable kingdom employed by man for food or ornament. Thousands of tourists in London every year include this market in the "sights" of the city; but they usually visit it during the day or evening, when comparatively little remains to indicate the business transacted. They may, it is true, find some of the auctioneers, who dispose of imported flowers or fruits, busy and noisy amidst a crowd of eager bidders. They can also see huge piles of baskets, boxes, and other packages, that give some idea of what has been or is to be done. Possibly they may visit the spacious new fruit market, and observe barrels of American Apples by the thousand, or cases of Pine Apples almost as numerous; but if their visits are later than 9 A.M. the great plant and flower market will be closed, and the practical, or what may be termed the principal business of the general market is closed. To gain anything like an approximate idea of Covent Garden it must be visited at early morning, and on several occasions at different seasons, and then those who are interested in the work of the world will find ample to astonish, to interest, and to instruct.

Few except those immediately concerned have any accurate knowledge of the manner in which business is conducted in Covent Garden. Many fancy that to hold a stall, stand, or shop in this market is a kind of hereditary privilege, and that outsiders are rigorously excluded; but this is far from being the fact, as whenever there is space anyone can claim the right to sell in accordance with the rules, and on payment of the dues or tolls. There are, however, something like 600 persons who have shops, stalls, or stands, either temporarily or for longer periods, and these, with their assistants and others, must bring up the total, exclusive of buyers, to about 2000 persons who are on every market morning actively engaged in the business. It is not generally known, too, what a broad distinction is made between growers who are also sellers and those who only sell what they have purchased from the

producers. The growers are given precedence as regards the choice of situation and application for space, while the others, termed "higglers," have in a great measure to take their chance, and that is usually an outside position. Then also as to the collection of market dues. In the case of shops and stalls or stands a rent is paid daily or for longer terms according to arrangement. Upon a large quantity of the produce brought in for quick morning sale, however, tolls are charged at the rate of $\frac{1}{2}$ d. to $1\frac{1}{2}$ d. per barrel, basket, package, or in whatever form the particular fruit or vegetables are sent in, for it is to these that this method specially applies. For instance, a barrel of Onions or a barrel of American Apples and a basket of Watercress contribute the same amounts to the income of the Duke of Bedford—namely, 1d. each.

But the main object of these notes is to point out some of the leading features of the Christmas market, and first to be considered is the fruit, which in all respects constitutes one of the most important parts of the business. Apples, of course, take first rank, and here we learn that English Apples are very scarce, and long prices are required for good samples of choice fruit. To compensate for this deficiency American Apples have been sent by hundreds of barrels, as, though the crops in the United States were not so good as usual, the prices here paid well. It is said that some of the dealers in foreign fruit have had a most profitable season, and 42s. per barrel is mentioned as the rate obtained for Newtown Pippins. Pears from English gardens are still more scarce than the Apples, but from France and the Channel Islands come plenty of fine fruits, especially baking or stewing Pears.

Pine Apples constitute a trade in themselves, both to growers and the dealers. Shiploads of these, with Oranges, are sent from St. Michaels, where the cultivation of these fruits is now an important industry. Handsome fruits are sold for a few shillings which not many years ago would have brought at least four times the sum. Some home-grown Pine Apples still find a place in the markets, but only the best fruits for special occasions. In the large Floral Hall, a new fruit market, at times we have seen astonishing displays of imported Pine Apples—hundreds of cases, opened and arranged along the floor, in preparation for auction sales, presenting a spectacle such as could probably not be seen elsewhere.

Grapes are in demand at Christmas, and here our own growers have a chance of competing with advantage. A high authority in the market says, "The Grape business is only in its infancy," and this piece of information will come as a welcome surprise to those who are familiar with the enormous quantities produced at Worthing, in the north and east of London, besides the great establishment at Clovenfords. It indicates that the demand is still greater than the supply, but as the latter is increased the prices go down, and then it becomes a question whether the cost of production, carriage, and sale can be covered. There is good indication that late Grapes pay better than early ones, because the cultivators for market are concentrating their attention chiefly upon the former. At the present time the major portion of the supplies consist of Alicante and Gros Colman, with Muscat of Alexandria and Lady Downe's in smaller quantities. Of the two first named neatly packed baskets are sent and sold by thousands during the busy season at fairly remunerative prices. In addition to these, however, we find the Spanish Almerian and Sweetwater Grapes in liberal supply, the former of which arrive packed in barrels and the others in boxes, furnishing abundance of good fruit that can be sold at moderate rates, and though not equal in quality to the home-grown Grapes they are very useful.

Oranges have already been noted as coming in quantities from the Azores; large consignments are also received from Spain and Portugal. Nuts constitute an essentially Christmas feature, and are obtained from many widely separated countries. From the West Indies and South America come Cocoa-nuts and Brazils in plenty; small nuts, including Barcelonas and Almonds, being

secured chiefly from Spain, the Azores, and the South of Europe generally. Tropical fruits of several kinds—such as Custard Apples, Prickly Pears, &c.—are represented by small supplies; but Bananas are imported in large quantities from the Canary Islands, West Indies, and Florida.

From the above it will be seen that fruit constitutes a large proportion of the seasonable supplies, but there is another great character of the Christmas week that cannot be overlooked—namely, the Mistletoe, Holly, and evergreens for decorative purposes. The trade transacted in Mistletoe in the course of a few days is astonishing, and we are informed that no less than 2000 crates have been received at Covent Garden for Christmas use. These crates are lightly but strongly made, about 4 feet wide and deep, and in them the Mistletoe is closely packed, each crate probably containing sufficient for supplying at least 100 homes with ample material for enjoyment during the season of festivity. If this be a fair estimate Covent Garden alone must furnish 200,000 homes with the interesting parasitical plant then in such great demand amongst young people. The Holly is also received in large quantities, but there is no means of gauging the actual number of loads or bundles. A visit paid a few days before December 25th to the extensive outside enclosures near Market Square gives the best idea, for then the Holly with miscellaneous evergreen shrubs is seen piled up in great mounds such as would be thought could never be cleared. Yet they all disappear, and good Holly is always in great request. This year the Holly is particularly well “berried,” and is selling well; last year there was but little of value, and much difference is found in the relative quantities of Holly and Mistletoe sold. When the former is good there is less demand for the latter, and *vice versa*. The Mistletoe is nearly all obtained from France, especially Normandy; but the Holly is all English. The common Firs known as Christmas trees are disposed by waggonloads, the trees ranging from diminutive specimens 20 inches high to giants of 20 feet, that are provided for special fêtes.

Flowers are necessarily in demand, but their prices are so high that they do not come within the reach of the multitude. A florist with only a small window to furnish assures us that he cannot obtain sufficient for his purpose at a less expenditure than £10 per morning, and at first glance some would be inclined to think the flowers were worth as many shillings, certainly at some seasons a much better display could be had for the last named sum. While the mild weather lasted flowers were unusually cheap, in fact there was a difficulty in selling them; now it is quite different, and it is surprising how great a change was effected in a few weeks. Chrysanthemums are the most abundant, but they have a dull and faded appearance in most cases. Violets come next in quantity, then of forced plants Roman Hyacinths, Lilies of the Valley, Lilac, and Richardia spathes, the last realising from 12s. to 18s. per dozen first hand. There are also a few boxes of Zonal Pelargoniums, Bouvardias, Roses (chiefly imported), Carnations, Eucharis and Tuberoses.

Plants in pots are chiefly Palms, Ferns, and others possessing foliage attractions, and useful for grouping, but there are some examples of early Tulips, Roman Hyacinths, and Lilies of the Valley, pots of these mixed having a pretty effect, and seem to be most in demand. Small shrubs in pots are also numerous. Of vegetables there is nothing special to note, the hardy Kale and other greens are the principal, but good Brussels Sprouts are in demand. Seakale is also selling well, and is being sent in more freely.

Such are the leading characteristics of Covent Garden in the present week, and they may be taken as an example on a larger scale of other metropolitan and provincial markets. In some respects the weather has been exceedingly unfavourable to the producers, but a measure of compensation will be derived from the higher prices obtained. The greatest disadvantage probably is found in the fact that many intending purchasers are deterred from undertaking expeditions with that object in view, and in this

way severe, and especially snowy weather, a few days before Christmas makes an enormous difference to business, both of wholesale and retail dealers.

GOOD WISHES.

As I am writing at the close of the year, and near Christmas, perhaps, as an old reader—a reader of over forty years—I may be permitted to send my greeting to all who are interested in the *Journal of Horticulture*—Editor and staff, writers and readers, one and all, and hope that they may have a peaceful and soberly merry Christmas, and a bright and prosperous New Year. We that are getting on in life naturally look back on past days, and are disposed to think that those days were the best, and that our Journal now, the dear old *Cottage Gardener* of the past, was then the best in the world. I rejoice to see that it still goes “Upwards and Onwards.” This *nom de plume* was the signature of him who is now, I think, your oldest writer, Mr. R. Fenn of Sulhamstead. He, I know, has a leaning for past ways, and a lingering love for past days and past writers; still, equally with myself, I know that he rejoices in the progress of our Journal on the lines of his old signature, and rejoices specially in the vigour, the freshness, the ingenuity, and the high intelligence of the present day writers on our paper. “The older order changeth, yielding place to new,” but the world’s work is done. The lamp of gardening knowledge is taken out of older and quieter hands, and is carried forward with youthful impetuosity, with perhaps a higher educational intelligence, but not with more practically directed energy than we their fathers carried it. Go on, then, ye young and strong men and conquer, and none will rejoice more than we who belong to an older and passing away generation. — N. H. POWNALL, *Lenton Hall Gardens*.

[It is very pleasant to be kept in remembrance by old friends, and we assure our genial correspondent that Editor and staff appreciate and reciprocate their kindly greetings. It is but natural for those who have passed the meridian of life to think that the past days were the best days. We all look back longingly to the time when our “hearts were young,” and because young, more impressionable to passing events than they can be in after years. But though the old hearts cannot be so blithe as the young, they are not less constant, and not less sympathetic with past and present workers in a common cause—gardening. This is demonstrated not by the above letter only, but by the veteran alluded to in it, and whose “lamp” still shines on another page of the present issue. It is not the less welcome, even though it may make more clear certain shortcomings of which all men must be conscious who strive to do their best under the high-pressure system of working in these latter days. Both these time-honoured friends, and others who have laboured long and zealously, have done yeoman’s service in working and teaching, and thus in training successors for carrying on the work they love and will do to the end. While we rejoice in the energy and ability of their successors, we are not less proud of the pioneers. The world’s work is not yet done in gardening, nor are all its old workers, as is evident by the vivacity they display when impelled, now and then, to enter the literary arena. They can brighten the pages of the *Journal* yet, and impart to it freshness by their facile pens. We are thankful, as they are, that this is so, and trust we may live and love together to exchange mutual greetings at the close of another year. And now, to readers and writers, old and young, and everywhere, we re-echo the words of Mr. Pownall—for we can find no better to convey the expression of our strong hope and sincere wish that “one and all may have a peaceful and soberly Merry Christmas, and a bright and prosperous New Year.”]

FLOWER CULTURE FOR PROFIT.

HELLEBORES.

HELLEBORUS NIGER MAXIMUS is by far the best of the Christmas Roses—the name by which one section of Hellebores is most familiar—and a good stock of this variety may be said to pay better than any other plants or flowers that can be grown. This, at first sight, might be considered a rather strong assertion, but it can be proved by facts and figures. At a very trifling cost or outlay in the way of manure, labour, and temporary protection we were able last season to gather from four span-roofed frames flowers that sold for upwards of £6, and probably nearly as many were used for the home and town house decoration. It must, however, in all fairness be added that it has taken at least six years to work up our stock of the plants to this pitch, the start having been made with about one dozen strong clumps. Much the best prices are

obtained just before Christmas and for about one week afterwards. We are very well satisfied with 1s. per dozen blooms at this the commencement of the season, the prices then gradually dropping to about 4d. per dozen for fresh blooms. In all probability our average per strong clump this winter will be 100 blooms, and it will thus be seen I am not far wrong in attaching so much value to the breadth of plants under my charge.

Most gardeners are fully alive to the usefulness of these plants, though only a comparatively few have as yet succeeded in growing them successfully. Failures are not so much due to any inherent fastidiousness of the plants, but rather to either a bad start being made or an excess of zeal on the part of the cultivator. What I call making a bad start is the too common practice of purchasing cheap plants, and which are principally obtained from Austria and northern Italy. These are simply "collected" plants, obtained from where they were growing in a wild state, and not only is the variety inferior, but the plants are almost irrecoverably injured by long exposure to the air before they reach this country. Last winter I saw a large breadth of imported plants in a nursery that had lost nearly all their leaves by an ordinarily severe frost, and though most of them are producing a few flowers this season they are yet a poor weakly lot, and scarcely worth garden room. Nor are the plants grown in Holland to be depended upon, and those who are anxious to make a good start should purchase, as soon as they can have them, strong home-grown clumps from English nurserymen. The flowers of the Easter variety do not equal the Eucharis in purity of colour, but are a good substitute for the same, and far more serviceable.

Where so many err is in constantly lifting, shifting, and dividing their clumps. Large growers of these flowers for market certainly take great liberties with their plants, a great breadth being annually cleared of their leaves, lifted, and planted thickly under glass, so as to have abundance of flowers for Christmas; but they have several large batches of various ages always coming on, and can afford to rest or split up any plants previously overworked or roughly used. Private growers with a small stock of plants must run no risks, but ought rather to arrange their plants in such a manner as to do away with the necessity for moving them for several years. What Hellebores require and should have, if possible, is a deep and fairly rich root run, a moderately rich leamy soil best suiting them, though I have known them do well in what is termed a brashy soil. A hot and dry soil or position will not do. Wherever planted they ought to be arranged in groups or patches, with a view to covering these with frames or handlights, as unless thus covered the flowers are of little market value, the colour and, strange to relate, durability of the flowers gathered from non-covered plants being faulty. We find span-roofed frames 9 feet long and 4 feet wide with hinged lights very serviceable. This season the flowers are very late, but if there are plenty of buds half or three parts expanded at Christmas we shall be very well pleased, as these if gathered and placed in pans of water in strong heat, such as a plant stove, will open well in a few hours. Farther cultural notes must be deferred.—M. H.

CHRISTMAS EVERGREENS.

As the festive season approaches not only are eating and drinking commodities in great demand, but also all kinds of evergreens. The British public has always bedecked their homes with these, from humblest cottager to the wealthy, and it is no unusual sight to see the working classes on Christmas Eve, or just before, carrying home a small Spruce Fir as a Christmas tree for the children and a small bunch of evergreens, that both together, perhaps cost the modest sum of sixpence. It is also surprising to see the large number of crates of Mistletoe disposed of and we wonder whence it all comes. I am told that the greater part of the Mistletoe that finds its way to our large markets comes from France and other European countries. Be that as it may, it is certain there is not sufficient in these islands to meet the enormous demand for it.

It has been the custom for many years for the butchers, bakers, grocers, and all purveyors of useful commodities to decorate their shops, especially at this time of year, and show off their wares to the best advantage; and it is surprising that year by year each one tries to vie with his neighbours to have the best "show," and to improve on the last year's display; and the streets will be thick with people admiring and criticising, and giving their opinion on the tradespeople who have the best display, that where a plentiful supply of evergreens are forthcoming these are bought up to help in this Christmas decoration. The fashion has also gone to the church decorators, and the ladies who so willingly give their time, zeal, and ingenuity for beautifying the house of God deserve great

praise for the pains they take in the arrangement of the different kinds of evergreens. Texts in windows, panels of reading desks and pulpits, neatly edged with foliage and berries. Green moss also is used with effect. One advantage of evergreens at this season of the year is that they last fresh so long after being cut. Some hanging wreaths that were made last January with small pieces of variegated Box did not look bad at the end of March. Sashcord was used as a foundation with small string for tying on. I also saw some long wreaths made with large leaves of the Irish Ivy tied very closely that did duty in a barn for a meeting in October, and from some cause or other were not taken down. The March following another meeting of a different character took place in the same barn, and the Ivy wreaths were still left up, and by candlelight they looked but little altered. The almost total darkness and stillness perhaps had something to do with their keeping so well. The evergreens used for church decorations, as a rule, keep well the five or six weeks they are allowed to remain.

Foremost amongst the Christmas evergreens stands the Holly. No bunch or bundle is complete without it, and is eagerly sought after the fortnight preceding the 25th of December. I usually have cut the quantity I think will be required about the first week in December. It is laid in heaps and Laurel boughs placed over it to protect it from birds, for if left till the month is far advanced the chances are the birds take the greater part of it. With us they usually begin before November is out, stripping tree by tree till all are gone. Nor is it all safe when cut even from birds, for if field mice are at all abundant they will find them out and strip the berries off, I suppose for the sake of the small kernels inside the stones. A few years ago we had a particularly fine-berried tree that I wished to keep for home use; this was cut earlier than usual because of the birds, and covered over well with Laurel boughs. This heap was not looked at till wanted in the week preceding Christmas, and judge of my surprise when it was uncovered not a berry was left upon any of the branches, but all or nearly so lay upon the ground. It was evident that field mice had stripped them, and the ground in the vicinity was honeycombed with their runs. A good cutting of Laurel boughs are now put underneath the Holly as well as above it, as a little prevention from the depredations of these little rodents.

The small-leaved Ivy is one of the best plants for decoration, either for summer or winter, long loose trails from 3 to 6 feet long particularly useful in a variety of ways for rooms, halls, passages, churches, or near cornices, or wherever a hook or nail can be put. It is not of so much use if taken from a wall or building, but should be taken from woods and half-wild shrubberies, where it is found growing in its own wild way, climbing up the trunks of trees and shrubs, and then hanging down in long graceful trails, sometimes 12 feet in length. The stone pillars in a church I have seen decorated with it, not just a few pieces round the top, but commencing at the bottom of the pillar, and training it in an irregular, but still tending in an upright direction, varying the branches and laterals from 3 to 12 inches apart, making it appear as if the Ivy had grown there. Very small tacks appear to have been used here and there to fix it in position, also a few circles of small string round the pillars.

The leaves of *Berberis Aquifolium* make very good edgings for text boards, so also small sprays of Lobb's Thuja (*Thuja gigantea*), fixed with small tacks. The foliage of this last-named plant can be used in a variety of ways that suggest themselves to the art of the decorator. It is good for making small wreaths from 2 to 3 inches in thickness, with thick string for a foundation. The foliage lasts well, it is elegant and graceful, and small pieces a few inches in length, if cut right, lie flat, and can be used for making edgings or letters on a light ground, such as calico or canvas. If on a board, very small tacks can be pierced through the stems, but if only on canvas or bunting, small pins answer very well, or better still, a needle and thread. A very neat and lasting plant is the small Periwinkle, *Vinca minor*, and its variegated variety. Sprays of from 12 to 30 inches in length are good for hanging down from lamps and chandeliers, or other things where something small and light is required. *Lonicera aurea reticulata* is pretty, but will not last so long as the *Vinca*.

Among the other evergreens used for Christmas decorations are the Laurel, Aucuba, Box, Yew, and berried Ivy. *Cupressus macrocarpa*, *C. Lawsoni*, *Abies Douglasi*, *A. Nordmanniana*, and *Thuja gigantea*, when plentiful are also good, but no attempt should be made to disfigure such trees by cutting the ends of the branches off. It often happens that where branches hang over walks or over shrubs the bottom branches want sawing off at the trunk, and it is the foliage from these that can be utilised, and now is a very good time to saw them off where wanted. Box, Yew, and Laurel should be cut as not to disfigure the plants. Small boughs of the *Aucuba japonica* are good for filling up grates and fireplaces built up and laid lightly on each other. One of the best

things sought after is the variegated Holly, but it should be cut with a sparing hand, for it takes a lifetime to grow a fair sized tree. Leaves of this and the berries I have seen made into wreaths and crosses at cemeteries as tributes to departed relatives and friends, lasting and looking fresh for a long time; the leaves as an edging all round, with a centre of 2 or 3 inches (according to size) of berries stuck in with pins or threaded with a needle. Variegated Box is pretty, but unless it thrives well and there is abundance of it, should also be cut sparingly.—A. HARDING.

A GARDENING TOUR IN IRELAND.

(Continued from page 513.)

THE concluding sentences of my last letter referred to a garden visited on the north coast of Antrim, which occupied an extremely exposed position, and to that a few words will be devoted in the present communication. When gardening is successfully carried out under the greatest difficulties we may expect to find something of special interest. I have had opportunities of visiting many exposed gardens in Great Britain along the east, west, and south coasts, and have often been astonished at the results produced under most unfavourable circumstances. Upon one occasion I journeyed to the late Mr. Percival's residence at Southport, Lancashire, to see his large collections of Orchids there in fine healthy condition; yet the houses were within a short distance of the sea, and the prevailing powerful westerly or south-westerly winds swept into them laden with salt whenever the ventilators were open, as they were very freely and generally. Along the Northumberland and Durham coasts also there are several gardens quite near the stormy North Sea, as, for instance, Earl Grey's garden at Howick Hall, Lesbury, where Mr. David Inglis has for so many years produced such excellent cultural results, but there is more protection from the winds than at Southport, though the cold is greater in the winter and early spring. At Sunderland and in the neighbourhood several gardens are still more exposed, with comparatively little protection, notably at Seaham Hall, one of the Marquis of Londonderry's estates, which is under the management of one of the oldest Journal subscribers and readers, Mr. R. Draper. There also gardening is carried out under adverse circumstances, and with no small measure of success. These are only a few examples of exposed gardens that occur to me on the moment, and where I have been particularly impressed with the disadvantages overcome, but many others could be named in England, Scotland, and Wales occupying equally unfavourable positions. In all such even a moderate degree of success depends upon the judgment and care exercised on the part of the gardeners, who must be essentially experimental at first, as it is only by experience that it can be ascertained what plants will form the best protection and what others can be grown, either indoors or out, sufficiently well to pay for the labour expended upon them. There is a surprising difference in the adaptability of plants to particular situations, both as regards exposure to cold, to wind, and to the sea breezes, and the same remark applies to fruit trees with equal force. Because a certain plant, shrub, tree, or variety of fruit is found satisfactory on the west coast it does not by any means follow that the same will give as good results on the east. Some plants possess a much greater elasticity of constitution than others, and to find these will naturally require continual trials for several years with close observation of their behaviour in various positions. The record of an exposed garden kept by a practical and well informed man can thus be rendered both interesting and useful, as it serves for a guide to others who are in similar difficulties.

Attention to the matter is especially necessary, because the most picturesque situations that can be selected for gentlemen's country or seaside residences are usually the most exposed and the least fitted for gardening in a general way. One of the first considerations in such a place is to provide something as shelter from wind, either walls, fences, hedges, or plantations, and here it may be noted that the matter is of considerable importance, as if well done at first much after trouble and expense will be spared. A short time since a cultivator engaged in flower production in the Scilly Isles was discussing this subject with me, and he expressed himself somewhat as follows—"In our Isles the wind is our greatest enemy, and causes our plants and flowers more damage than anything else. Many different plans have been tried to obviate this, and a good proportion have failed absolutely. Some went to the expense of erecting walls, but these, if anything, seemed to aggravate the mischief, for the wind bounced over them and descended upon the plants with redoubled force. I tried them myself, but was soon glad to remove them notwithstanding the expense. Closed fences are similarly useless, but partially open ones were better, and best of all were strong well planted hedges. They broke the force of the wind, which filtered through them as it were, and so satisfactory

did they prove that I have extended them round, and as divisions, on the whole of my land." This applies, of course, to an exceptional situation, but there are many places where a similar result would be obtained, and in nurseries occupying exposed positions, and in others for the protection of tender plants, the value of hedges for shelter has been abundantly proved. For a garden of any extent something more is required, and a plantation belt of the hardier Conifers becomes a necessity. But this long preamble is only intended to lead up to a short description of the garden at

RANKERRY HOUSE.

When Lord Macnaghton selected this site near Bushmills for the present spacious mansion he undoubtedly paid more regard to the attractions of the coast scenery than to the fitness of the place for the development of a satisfactory garden. Many in fact would have despaired of ever producing anything of the kind. A large measure of success has, however, attended the efforts of the gardener (Mr. E. Duffin) to render it not only useful but ornamental as well. The house stands on an elevated portion of the cliff overlooking Blackrock Bay, and commands an extensive prospect along the coast to Portrush, with the Donegal coast in the distance, and on a bright sunny morning, like that when I was there, it was delightful in the extreme. The garden is a short distance farther in from the sea, but near enough for the spray to reach it on stormy days, and Mr. Duffin says that sometimes he "could go round after a storm and gather the salt from the trees and shrubs in large quantities by running his hand up the branches." This, it can be readily imagined, must be a serious trial for many plants, and it is with the wind the worst enemy that has to be contended against. Somewhat over an acre is enclosed within stout walls, as at this elevation these are found absolutely essential for the protection of glass houses and fruit trees; but within this enclosure hedges of Hawthorn and Elder, 3 or 4 feet high, are employed as sectional divisions and for additional protection. The land slopes rather steeply to the south, and therefore is well exposed to the influence of the sun; the atmosphere is generally clearer and the rainfall less than farther inland, so that certain advantages are employed of which the best possible use is made in the production of fruits, vegetables, and flowers.

The natural soil was not well suited for plant growth, and a large portion had to be made up by soil brought from a distance. This was thoroughly done, however, and by the judicious application of fertilisers since it has been gradually brought into good condition. The results are seen in the vegetable crops, Cauliflowers especially succeeding admirably. Peas also give good returns, Duke of Albany, Telephone, and Ne Plus Ultra being the favourites. Of other general kitchen garden crops are secured in good quantity and quality, so that when Lord Macnaghton and family are in London supplies are sent from Rankerry, and preferred to what could be obtained much nearer at hand. A very careful system of cropping has to be adopted, and considerable foresight is needed to maintain a due succession, as it is not at all uncommon for several sowings to be lost. Some idea of the success achieved can be formed from the fact that a succession of Cauliflowers and Broccoli has been maintained for the past four years with only one week break each season.

Amongst the fruits Strawberries are particularly successful, a bountiful crop of fine fruits being obtained from such varieties as Vicomtesse Hericart de Thury, Dr. Hogg, President, Duke of Edinburgh, and James Veitch. In several parts of the garden rows of compact sturdy plants showed how well these useful fruits can be grown when due attention is given them. They reminded me of those in the Royal Strawberry Gardens near Virginia Water, where Mr. Sharp has been so successful, and wherever healthy Strawberry plants are grown without an undue luxuriance of foliage the crops of fruit are usually the most satisfactory. Currants of various kinds thrive, and bear satisfactorily trained to wooden trellises, Lee's Prolific Black being a great favourite, and a profitable variety to cultivate where quantities of fine fruit are required. Red and White Currants are also included, and with Raspberries and Gooseberries give fair returns, though some little trouble has been needed to establish them. Upon the walls and in any sheltered places Apples, Pears, and Plums are being tried, and some have proved satisfactory, while as regards others the record is not yet complete, and further results have yet to determine which shall be grown and which discarded. As an example of the difference in experience with certain varieties, two days before in Leicester I heard a practical fruit cultivator condemn the Apple Lord Suffield as "utterly useless" for that district; yet here, at Rankerry, in the extreme north of Ireland, it gave perfect satisfaction together with Lane's Prince Albert, Potts' Seedling, Warner's King, Stirling Castle, and Ecklinville.

One of the special features of Rankerry gardens, however, is a

lean-to unheated orchard and Peach house range at the upper part, where highly satisfactory crops of useful fruits are obtained, Apples, Pears, Plums, Peaches, and Nectarines. Though of considerable length the houses are low and narrow, yet the returns, judging by what I saw, would yield a very substantial profit on labour and outlay. The trees are planted out nearly in front of the house, but some are on the back wall, and all were equally prosperous. The Peach house is 130 feet long, in two sections, and a grand crop was obtained this year, the supply extending from the middle of August to the middle of October, without artificial means, though it is intended to introduce a little assistance in this respect. Fine evenly trained trees in good health, yet not too vigorous, were observed of Elruge, Lord Napier, Pineapple, and Violette Hâtive Nectarines, and Royal George, Grosse Mignonne, Walburton's Admirable, and Noblesse Peaches. There also under glass Vines, Melons, and Tomatoes are extensively grown, without any apparent ill results from proximity to the sea.

Besides the ordinary decorative plants under glass, Roses and Carnations are a feature out of doors with miscellaneous bedding plants, Lobelias succeeding admirably, serve to render the marginal borders gay, and in August the appearance was especially bright. The garden was altogether, owing to its situation, an astonishing one, and with so many difficulties to contend with, Mr. Duffin deserves much credit for the success achieved.—L. CASTLE.

(To be continued.)



BLINDS FOR COVERING THE ROOF.

NOT only are blinds beneficial for shading during the summer, but they prove invaluable during cold severe weather. Those of a heavier nature are necessary for winter, and will keep the temperature of the house several degrees warmer than when the glass is fully exposed. The greatest difference is observable, however, during cold winds. From an economical point of view there is, perhaps, not much to be said in favour of blinds, but for the benefit of the plants they cannot be too strongly advocated. By their use the overheating of the hot-water pipes to maintain the desired temperature is often prevented.

ODONTOGLOSSUM HOUSE.

In some structures where these are grown they are so saturated with moisture that when severe weather sets in and warmth in the pipes is necessary, the plants and the woodwork are never dry, water hangs upon them for days. This must and can largely be prevented by leaving the ventilators open a little at the top. This necessitates the supply of more heat in the pipes, but the moisture that is evaporated has a ready means of escape, and the foliage of the plants will be found dry in the morning instead of dripping with water. As long as the moisture can be evaporated once during the day no harm results, but when it is allowed to hang about the plants several days in succession decay soon commences.

PHALÆNOPSIS.

During severe weather these should not be suspended very near the glass, or serious injury may result. They will be perfectly safe if they are 18 inches below the glass. Even at this distance if blinds are not used a few mats tacked over the roof outside where the plants are suspended will secure them against injury.

CATTLEYA HOUSE.

In cold severe weather the temperature of this structure may be allowed to fall to 55°, in fact it will be better for the plants than if the temperature is 5° higher. Considerably less harm results from a slightly lower temperature than is the case of overheating the pipes to maintain the requisite temperature. Less moisture will be needed during the time the temperature is lower, or else the foliage of the plants may become spotted. A low temperature with a saturated atmosphere is a certain cause of spotting. Be careful that plants standing near hot-water pipes are not allowed to shrivel. Plants that are unduly dried by this means should be removed.

CYPRIPEDIUM INSIGNE.

Where this plant has been pushed on for some years in heat and is now past flowering, stand the plants in a cool house for a time

where they can enjoy a season of rest. If introduced at once into a vinery or Peach house they will flower another season too early to be of much service. They are not needed before November, and we have found them doubly useful where they unfold their flowers after the middle of December. Give the plants a month's rest and then start them into growth where they can have a temperature of 50°.—ORCHID GROWER.

MASDEVALLIA SCHROEDERIANA.

THERE are not too many novelties amongst the more attractive Masdevallias, and though we have plenty of curiosities, yet something more is required to brighten collections. A welcome addition is *M. Schroederiana* (fig. 74), which was sent by Baron Schröder



FIG. 74.—MASDEVALLIA SCHROEDERIANA.

from his great collection at The Dell on July 8th this year, and when exhibited before the Orchid Committee of the Royal Horticultural Society a first-class certificate was awarded. The flowers are of good size, the three outer divisions nearly equal in size, but the two lower are rather the larger, edged with deep purple, and white in the centre. The sepaline "tails" are very long, recurved, and yellow, giving the flower a very distinct appearance. This may be expected to be utilised by the hybridisers, and ought to yield some novel results if it will cross readily with other allied species.

WALL PEARS.

WITH regard to "Useless Pear Trees Made Useful" (*Journal of Horticulture*, November 27th), I herewith send a few specimen Pears from the trees made useful. First to come under notice is *Beurré Rance*. This tree is probably over thirty years old, with seven tiers of branches 40 feet long. Before this tree was root-pruned and fresh soil given ten years ago, the tree never bore any

fruit worth gathering, but since the root-pruning operation we have had excellent crops of good clean fruit, similar to the specimen sent. I had one crop weighed which was 112 lbs. weight of fruit, giving an average per Pear of 12 ozs.; every one of the Pears was sound and fit for use.

Winter Nelis comes next. The specimen sent is a fair size fruit of this sort; we have had fruit larger. The tree is upon a west wall, is about twenty years old, planted upon tiles. We have good crops of fruit, and when well grown it is of good flavour. We have four trees of this variety, which give us a long season of dessert fruit, planted in different aspects and gathered at different times. We often have this variety in use five and six weeks.

Glou Morceau follows. The tree is on south wall and about twenty-five years old, and bears well every year. The fruit is very useful, coming in at Christmas every year, and a most excellent Pear for market purposes. Our tree is in good health and looks well. The Catillac Pear sent is from a tree in open quarters, but a very fair specimen.

I may say in passing I had a Marie Louise Pear tree removed from a north wall to a south wall a few years ago. This tree has given excellent crops of fruit since, except the first year after removal. This year we had twenty-two dozens of clean Pears. Again we have an old tree (against a building on a wall 14 feet high) of old Brown Beurré, which never fails to crop; we had eighteen dozens of good fruit this year.

The paper I read at Brighton, and which you have kindly referred to, gave my system of cultivation, and I have no hesitation in saying that old Pear trees on walls can be made useful and to bear good crops of fruit by a similar system of cultivation to the one I advocate. The trees could be cut back and grafted with known varieties to succeed in the district. If grafting is decided upon root-pruning will not probably be required for some time afterwards, and perhaps not at all.—ROBERT SMITH, *Yalding, Kent*.

[The specimens sent are very fine and fully bear out all that Mr. Smith says respecting his practice.]



REVIEW OF THE PAST SEASON.

THERE are no doubt many enthusiastic cultivators of this flower who have no opportunity of comparing their own produce with that of many others at the leading exhibitions, therefore have not the means of knowing whether the season just past has been as favourable as others have been to the development of Chrysanthemums. The horticultural press, and especially the *Journal of Horticulture*, devotes a considerable space "in the season" to reports of the numerous exhibitions, and has thus earned the thanks of an army of workers for disseminating so much information. The practice of recording the names of varieties in first prize stands is of great service to cultivators, many of whom go carefully through the reports at the end of the season and revise their lists for next year's display; and readers who do not require such information readily forbear for a short space for the benefit of others, and then find all they desire on general subjects.

In spite of many drawbacks to which the plants were exposed during their progress since last December, it would be very wrong to say this has not been a good season. Taken altogether Chrysanthemums never have been more satisfactory than during the season of 1890.

It is wonderful to note the great change that has taken place in the competitive ranks. Where there were half a dozen exhibitors then, six or seven years ago, in any particular class, and that number then was considered to be a large one, three times as many are now to be found struggling for the premier honour. This, I take it, is a most remarkable advance, yet some would have us believe that Chrysanthemums have had their day, and so on. When twenty exhibitors enter for one class, and eighteen out of that number "turn up" to compete in a difficult class, such as was the case at the Birmingham Show, it speaks volumes for the spirit of emulation that exists. The class referred to was for twenty-four incurved and the same number of Japanese blooms, all to be distinct. This is a far more difficult class to fill than where the same number of blooms can be staged in thirty-six varieties only, and there is more credit due to a man who can win in such a great variety class than there is in duplicated classes, for it is in the "timing" of the blooms of so many that are distinct where several growers fail. There are two reasons which account for the increased number of competitors in the "difficult" classes—namely, a great increase in superior varieties and much larger prizes than formerly.

Not only in these large classes has the competition increased, but in the "twelves" and "sixes" in the cut bloom department the same is

noticeable. It is a very common occurrence to find twelve entries in these classes, and occasionally half as many more. It is in the classes devoted to Japanese blooms that the great increase in competitions at shows is the most marked. It has been said, and I think with some truth, that the stands of incurved blooms, taken as a whole, do not compare so favourably in the manner in which they are "set up;" they do not possess as much neatness and smoothness of floret as they should. I do not mean to say there are no stands of the present day to compare so favourably with those of the past; but what I mean is, there is a more general roughness throughout, even in spite of the improvement which is manifest in the extended list of varieties. There is too much striving for size of bloom at the expense of solidity and evenness of outline, which are the most important items to study in the presentation of perfect examples of incurved blooms. I suspect the chief cause of this defect lies in the fact of growers endeavouring to make their plants "look well" during the growing season; they overdo it by gorging them to such an extent with stimulants that it is not possible to mature the wood in such a manner as to produce such examples as is possible to obtain from perfectly matured plants.

Depend upon it if growers would pay more attention to maturing the wood of the plants and less to making the leaves so gross they would have more cause for satisfaction when November comes round in 1891. The Centenary Show at the Aquarium bore evidence of the justness of my remarks, as many stands of blooms were but indifferently "set up," and by cultivators who surprised many persons that I have since met, and who visited the late Show for the first time with the object of "picking up a wrinkle" or two; but as far as the manner in which many of the blooms were staged they were much disappointed, and did not fail to say so.

The prizes offered by the proprietor of the *Journal of Horticulture*, which were for the object of encouraging symmetry of bloom rather than size, and merit in staging the blooms, was productive of good. The winning stand especially was meritorious in the quality of the specimens staged, and deserved all the praise it received.

In staging the Japanese blooms there has been a tendency to place them too low. There is just a certain height at which they look their best, but lifted up too much they have a gaunt appearance; but "flopped" down close on the boards they look lost and quite out of character. The offering of the Veitch Memorial medals for both incurved and Japanese blooms to be staged with not less than 8 inches of stem and foliage, afforded test cases for future schedule makers who are wishful to improve the present method by dispensing with the ugly green boards and show cups. The Japanese did not look amiss. The results in this case were worth repeating, but the same cannot be said of the incurved blooms. Even these did not look so ridiculous as some very fine blooms I saw at an exhibition later. They were dressed in the ordinary manner, supported in tubes, but elevated at least 8 inches above the boards in the back row, and as they were minus their foliage they had the appearance of mops upon poles.

It would be a difficult task to devise means to revolutionise the present system of staging cut blooms for competition. Especially in the incurved section is this difficulty felt to be serious, so that the blooms could be represented in the same high state of cultivation as at the present moment.

A few words about the quality of the blooms staged. I do not think Japanese varieties have ever been better than those seen at some exhibitions. Particularly rich and bright has been the colours, and with improved kinds the stands have had a more massive appearance, the tendency nowadays being for varieties which have full centres, semi-drooping florets or incurved ones, rather than those which are remarkable for their breadth than anything else. Meg Merrilies is a type of this, and which is not so popular as was the case some two years since even. Such varieties as Avalanche, Mr. A. H. Neve, W. W. Coles, and Etoile de Lyon, or Mrs. C. Wheeler being more preferred. Certainly they give a more massive appearance to a stand.

In the incurved section the "Queen" family has exhibited a general falling off in the quality of the blooms, but there has been an increase in merit in middle and front row blooms. In no case have I seen the "Queens" well represented. If they were wide at one place they lacked depth and solidity, and in many instances exhibited a great want of freshness, which is most detrimental to their appearance. Of all the families of Chrysanthemums the "Queen" prefers a hotter and drier summer than we have had this year. The wood needs more maturing than any other family or kind to present the varieties in first-rate condition. Gross immature growth may give size in diameter, but fails to produce depth of bloom, solidity, and smoothness of petal, and these are the points which the Queen family, without exception, has lacked as far as my experience has gone. In many instances it has been impossible to find the premier bloom amongst this type of flower, recourse has had to be taken in selecting Princess of Wales for that honour. This could not be so if Lord Alcester was himself, I venture to say. This variety since it was introduced has taken more premier awards than all other sorts put together.

The Queen family has given trouble to cultivators all through the season. Many complaints were heard during the summer of the persistent manner in which buds formed at the point of growth much more often than was required or good for the plant's future. It would have been strange indeed if these discrepancies in the growth of the plants could be made without any adverse result when the time came to produce the blooms. The commencement of the trouble dates as far back as last December, when suitable cuttings were difficult to obtain.

The bulk of those to be had were weak, and not at all like what cultivators prefer. The next adverse circumstance which occurred to prevent regular and steady growth, which is much to be preferred, occurred during the latter half of the month of May, when the bulk of the plants were in the pots preparatory to transferring them to the largest pots. The small pots were crowded with roots. The weather at that time was exceptionally hot for the time of the year; on six successive days did the thermometer register 80° and over in the shade. No matter how much attention the plants received, it was difficult to keep them in a progressive state without feeling the effects of the extreme heat, which would conduce to premature bud formation instead of a free growth which is so desirable at all stages, especially at that period of their existence. The remedy in such an instance would be to provide shade for the pots until the plants can be placed into those in which they are to flower. Then followed an exceptionally cold, damp, and sunless summer, July being most remarkable in that respect. The consequence was the growth was "soft," and not of the character to produce firm blooms. September and October were two of the finest months of the whole year, and did much to restore the lost wants to the plants. A great change came over many collections of plants, which at one time appeared like being in anything but good order to produce good blooms. The great power the sun had did wonders in ripening the wood and maturing the leaves, quickly making the latter assume autumn tints. The past season of growth and flowering of the plants should prove conclusively that the Japanese section does not require the wood maturing nearly as much as do the incurved, and more especially the "Queen" family. While Japanese new varieties have been seen in goodly numbers it is remarkable how few first class varieties have been added to the incurved section.

CHRYSANTHEMUM GOLDEN QUEEN OF ENGLAND v. JOHN LAMBERT.

FOR the information of Mr. J. Lambert I may say that when I wrote my reply to "West Riding," giving a selection of Chrysanthemums, I meant Golden Queen of England, as there stated and described. I have not yet seen a "John Lambert" which could be included in a stand of blooms in which Golden Queen of England was also staged, the whole to be distinct; therefore had I named John Lambert in preference to Golden Queen of England I consider I should have been misleading "West Riding," as he would have thought I regarded the two names as being distinct, which I certainly do not. This was not my aim in obliging the correspondent in question. Until Mr. J. Lambert has sufficient confidence in the distinctness from Golden Queen of England of his presumed new variety to exhibit it in the same stand as the Golden Queen, where all are required by the conditions of the schedule to be distinct varieties, I consider he has no right to attempt to influence others to do what he does not appear to have the courage to do himself. It cannot be said he has not had the opportunity of doing so during the last exhibition season. He competed largely and met with great success, upon which I congratulate him. To add names to varieties merely for the sake of doing so is not calculated to benefit those who do not know the distinction, but who simply follow the instructions and advice of others.—E. MOLYNEUX.

CHRYSANTHEMUM MRS. ALPHEUS HARDY.

I SHOULD like to write a few words of encouragement to those who have been disappointed with the above variety, as having grown about one dozen plants this season I have had the pleasure of exhibiting six very fair blooms. One was shown at the Crystal Palace; this was the smallest, and I think I was the only exhibitor that had a bloom at the Palace. One was shown at Cheltenham, one at Monmouth, and three at Bristol; one of these at Bristol was, according to Mr. W. Drover, the second best bloom yet shown in England. As your readers might suppose, those blooms caused at each place no little attraction amongst the visitors and all connected with these Exhibitions. Besides these I have been able to cut nine other blooms, samples of which were shown at the N.C.S. floral meeting on December 10th. I have many more small blooms coming on plants which were stopped late and not disbudded; these I can see will be very useful for cutting for vases, &c. Now I think this ought to encourage all growers, but they must not look too much on the sunny side, for they cannot grow it like the Queen family. My advice is to all who have the room to grow eight or a dozen plants, to use different size pots and various soils, and stop a plant or two. My best blooms have been taken from plants grown in 7-inch pots, rather light soil, with a sprinkling of powdered oyster-shells and a little charcoal. I advise all to give Mrs. Alpheus Hardy another trial.—JOHN APLIN.

SPORT FROM LORD ALCESTER.

I SEE in the Journal that a correspondent who signs himself "R. C. T.," page 525, says he had a bloom of Emily Dale staged at the late Cheltenham Show which was the same as the above. Having to hurry away to Monmouth with another box of forty-eight blooms I had very little time to look over the blooms shown at Cheltenham. I have Emily Dale but not Golden Queen of England, as no exhibitor ought to grow the two, nor have I John Lambert, which I was told at the Crystal Palace was the nearest approach to this sport. As regards Emily Dale I have grown it for years, and have taken buds at various times; but I never had a bloom of it but what was rather flat, whereas this sport is a very deep bloom. It was much admired at Bristol and Monmouth. I might say here that it made its appearance as a root sport about the middle of last February. Your correspondent and all

other exhibitors can rest assured that this will cause no confusion in the Queen family. I have declined to part with the stock although I have had several tempting offers; but I have placed two cuttings in the hands of a very able Chrysanthemum grower, who will be able to let us know next season if it is distinct from Emily Dale and other varieties of the Golden Queen family.—JOHN APLIN, *The Gardens, Hasfield Court, Gloucester.*

MR. W. DROVER.

IN another column we publish a review of the Chrysanthemum year, but it would be incomplete without reference to the winner of the greatest prize ever offered—the historic centennial—and Mr. W. Drover seems fully entitled to be included amongst the Chrysanthemum men of the time by the publication of his portrait in the *Journal of Horticulture*. It will be remembered that the class provided by the N.C.S. was for cut blooms of forty-eight distinct varieties—twenty-four incurved and twenty-four Japanese—and that Mr. Drover won the first prize (£25) easily by the great superiority of his incurved blooms. He was also similarly successful in the contest for the first prize offered by the proprietor of this Journal for eighteen incurved blooms, excluding

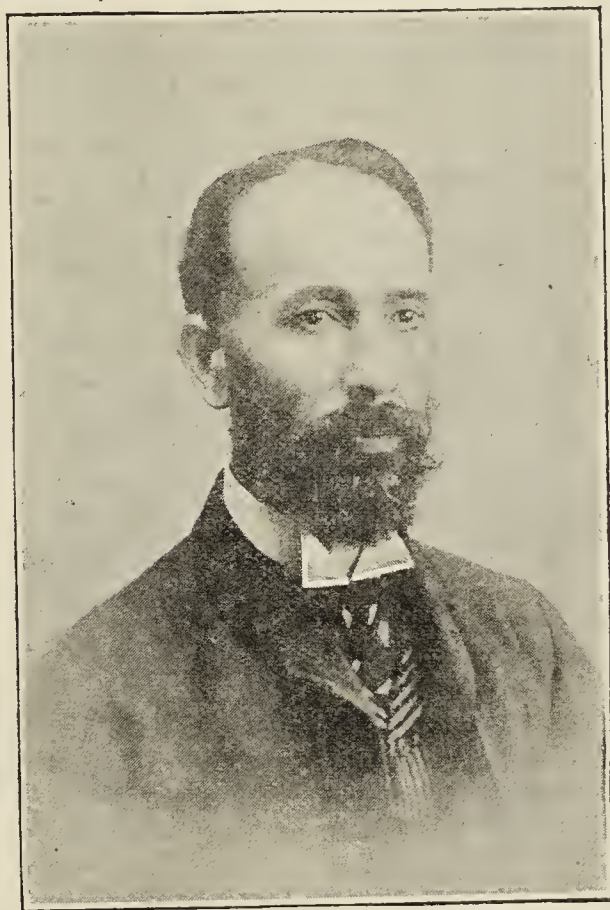


FIG. 75.—MR. W. DROVER.

the Queen family, which brought together some of the most interesting stands of incurved blooms in the Exhibition.

DERBY CHRYSANTHEMUM ASSOCIATION.

THE annual dinner of the Derby Chrysanthemum Association took place at the Victoria Restaurant, Victoria Street, Derby, on Saturday evening, December 13th, when the following members were present—Messrs. W. Allen, J. E. Barnesby, F. Bancroft, H. Bancroft, W. Boyes, G. Faycers, W. Fowkes, E. Letchford, F. Radford, Jarvis, W. E. Bates, J. Chandler, Lane, Woodward, Beach, J. B. Chapman, Adams, and H. J. Bell, the Hon. Secretary. The gentlemen's gardeners were represented by Messrs. Goodacre (Elvaston Castle), Barlas (Willersley Castle), Stopps, Borrowash, Evans, Spondon, Smith (gardener to Arthur Cox, Esq., Mill Hill), Potter (gardener to James Williams, Esq.). In the unavoidable absence of the Chairman, Geo. Sutherland, Esq., the chair was occupied by Mr. W. E. Bates, whilst the Hon. Secretary filled the vice-chair. After the usual loyal toasts had been honoured, Mr. Boyes proposed the health of Mr. Bell, the Hon. Secretary, and referred to the admirable manner he had performed his arduous duties during the past season, the success of the Association being due to his untiring efforts. Mr. Goodacre, the winner of the 10-guinea Challenge Derby China Vase, in rising to second the proposition, complimented the Association on its present satisfactory state, and characterised the recent Show at Derby as the prettiest one held in the Midland counties without exception. The proposition was carried with acclamation. Mr. Bell, in returning thanks, said it was a pleasure to him to be engaged in the work of the Association, and acknowledged the assistance rendered him by the Committee.

Mr. Hudson (one of the visitors) in proposing the toast of the evening, "Success to the Derby Chrysanthemum Association," referred in eulogistic terms to the courtesy extended by the Hon. Secretary, and

congratulated the Association on the good state of affairs. This was seconded by Mr. Barnes, and carried with loud applause. Mr. John Banks Chapman, an enthusiastic grower of the "Golden Flower," related in a humorous speech his first season's experience as a Chrysanthemum exhibitor. The remainder of the evening was spent in a convivial manner, a paper by Mr. Charles Gibson (one of the Judges) on "The Growth of Chrysanthemums," being reserved for a future occasion.

CERTIFICATED CHRYSANTHEMUMS, 1859 TO 1890.

IN the following list, which I commenced compiling for my "Chrysanthemum Annual" several years since, the names are given of the Chrysanthemums certificated by the Royal Horticultural Society, the National Chrysanthemum Society, and of some of the leading exhibitions like Kingston, the Crystal Palace, &c. The names of persons indicate those to whom the certificates were awarded. The Floral Committee of the Royal Horticultural Society commenced its duties in 1859; but though the Floral Committee of the National Chrysanthemum Society was only instituted recently, the novelties submitted to the latter body, and honoured by certificates, have been comparatively much more numerous. Many varieties have been certificated at local shows, of which no record could be obtained. It has been thought preferable to give the full alphabetical list first, and follow with general comments and descriptions. This course has therefore been adopted, and will be convenient in regard to the fact that many of the varieties certificated a quarter of a century ago are now out of cultivation. I shall be glad to receive any historical or other notes concerning the varieties named in the list as it appears, to be incorporated in the subsequent comments.—LEWIS CASTLE.

Abbreviations.—R.H.S. = Royal Horticultural Society; N.C.S. = National Chrysanthemum Society.

Abbé Passaglia, Incurved, Salter, R.H.S., Nov. 11th, 1862.
Admiral T. Symonds, Single, Cannell, R.H.S., Nov. 9th, 1886.
Agnes Flight, Japanese, Flight, N.C.S., Nov. 23rd, 1887.
Alberic Lunden, Japanese, Owen, N.C.S., Oct. 29th, 1890.
Album Fimbriatum, Japanese, Flight, N.C.S., Nov. 23rd, 1887.
Alcion, Japanese, Cannell, N.C.S., Nov. 21st, 1888.
Alfred Lyne, Incurved, Lyne, N.C.S., Nov. 7th, 1888.
Alice, Pompon, Ingram, R.H.S., Nov. 8th, 1864.
Alice Butcher, Pompon, Davis, N.C.S., Oct. 13th, 1886.
Alice Stevens, Pompon, Stevens, N.C.S., Nov. 12th, 1889.
Alpha, Japanese, Sullivan, N.C.S., Nov. 10th, 1886.
Amy Furze, Japanese Reflexed, E. Coomba, Kingston, Nov. 5th, 1886; Laing, Crystal Palace, Nov. 4th, 1887; Owen, N.C.S., Nov. 9th, 1887; Birmingham, Nov. 16th, 1887.
Anais, Pompon, Laing, R.H.S., 1884.
Angèle Amiel, Japanese, Veitch and Wright, N.C.S., Nov. 10th, 1886.
Annie Clibran, Japanese, Davis, N.C.S., Oct. 15th, 1890.
Aurantium, Japanese, Salter, R.H.S., Dec. 3rd, 1867.
Avalanche, Japanese, Molyneux, N.C.S., Nov. 7th; Stevens, R.H.S., Nov. 13th, 1888.
Beauté des Jardins, Japanese, Davis, N.C.S., Oct. 30th; Jackson, Kingston, Nov., 1884.
Beauty of Castle Hill, Japanese Incurved, Owen, N.C.S., Nov. 24th, 1890.
Beauty of St. John's Wood, (Princess of Wales), Incurved, Henderson, R.H.S., Dec. 3rd, 1867.
Beauty of Swanley, Japanese, Cannell, N.C.S., Nov. 25th, 1885.
Belle Navarraise, Hybrid, Wright, N.C.S., Oct. 14th, 1885.
Bell Paule, Japanese, Davis and Owen, N.C.S., Nov. 25th, Dec. 9th; Jackson, Kingston, Nov., 1885.
Bendigo, Incurved (Mabel Ward), Ridout, R.H.S., Nov. 13th, Westminster and Eastbourne, 1883.
Bertha Flight, Japanese, Flight, N.C.S., Nov. 21st, 1887.
Bessie, Pompon, Ingram, R.H.S., Nov. 6th, 1861.
Bicolor, Japanese, Drover, N.C.S., Dec. 9th, 1885.
Bismarck, Japanese, Henderson, R.H.S., Nov. 2nd, 1870.
Black Douglas, Pompon, Cannell, N.C.S., Nov. 12th, 1884.
Blushing Bride, Pompon, Davis, N.C.S., Sept. 9th, 1886.
Boule de Neige, Reflexed, Owen, N.C.S., Dec. 9th; R.H.S., 1885.
Boule d'Or, Japanese, Davis, N.C.S., Dec. 9th, 1885.
Brisce du Matin, Japanese, Forbes, N.C.S., Oct. 14th, 1885.
Bronze Queen, Incurved, Carter & Co., N.C.S., Nov. 14th, 1885.
Buttercup, Japanese, Veitch, R.H.S., Oct. 26th; N.C.S., Oct. 27th, 1886.
Cæsar, Large Anemone, Elliot, N.C.S., Dec. 5th, 1888.
Canary Bird, Pompon, Salter, R.H.S., Dec. 13th, 1860.
Caractacus, Incurved, Salter, R.H.S., Dec. 13th, 1860.
Carew Underwood, Japanese, Beckett, N.C.S., Oct. 13th; Stevens, R.H.S., Dec. 7th, 1886.
Carissimum, Incurved, Salter, R.H.S., Nov. 12th, 1861.
Carmen, Japanese, Laing, Crystal Palace, Nov., 1884.
Catherine Wheel, Large Anemone, Cannell, Dec. 9th, 1885.
Cérès, Japanese, Jackson, R.H.S., Dec. 12th, 1882; Davis, N.C.S., 1885.
Chardonneret, Fimbriated, Davis, N.C.S., Nov. 10th, 1886.
Charles Dickens, Japanese, Veitch, N.C.S., Nov. 9th, 1887.
Charles Gibson, Incurved, Mizen, N.C.S., Nov. 23rd, 1887.
Charlie Sharman, Japanese, Beckett, N.C.S., Oct. 15th, 1890.
Cincinnati, Large Anemone, Cannell, N.C.S., Oct. 27th; Crystal Palace, Nov. 5th, 1886.
Citrinum, Pompon, Cannell, N.C.S., Nov. 10th, 1886.
Comet, Japanese, Veitch, R.H.S., Nov. 13th, 1883.
Comet, Japanese, Salter, R.H.S., Dec. 3rd, 1867.

Comtesse de Careil, Early Japanese, Laing & Sons, N.C.S., Sept. 11th, 1889.
Coquette de Castille, Japanese, Holmes, R.H.S., Nov. 9th; N.C.S., Nov. 10th, 1886.
Cossack, Japanese, Veitch, R.H.S., Nov. 11th, 1874.
Countess of Warwick, Incurved, Salter, R.H.S., Nov. 20th, 1866.
Crimson King, Reflexed, Dixon, R.H.S., Nov. 14th, 1882 (King of Crimsons, Davis, Borough of Hackney).
Criterion, Japanese, Veitch, R.H.S., 1884.
Cræsus, Fimbriated, Davis, N.C.S., Nov. 10th, 1886.
Cullingfordi, Reflexed, Cannell, R.H.S., Nov.; N.C.S., Nov. 12th, 1884; Orchard, Kingston, 1885.
Danae, Japanese Incurved, Cannell, N.C.S., Nov. 24th, 1890.
David Windsor, single, Cannell, N.C.S., Nov. 9th, 1887.
D. B. Chapman, Japanese, Sullivan, N.C.S., Nov. 24th, 1886.
Dr. Masters, Japanese, Salter, R.H.S., Nov. 17th, 1868.
Dorrie, Japanese, Drover, N.C.S., Oct. 10th, 1888.
Duchess of Albany, Japanese, Jackson, R.H.S., Dec. 12th, 1882; Davis, N.C.S., Dec. 9th, 1885.
Duchess of Buckingham, Incurved, Salter, R.H.S., Nov. 11th, 1862.
Duchess of Edinburgh, Japanese, Veitch, R.H.S., Nov. 11th, 1874.
Duchess of Wellington, Incurved, Salter, R.H.S., Nov. 11th, 1861.
Duchess of Westminster, Japanese Anemone, Owen, N.C.S., Oct. 29th, 1890.
Duke of Berwick, Japanese, Stevens, N.C.S., Oct. 26th, 1887.
Edouard Audiguier, Japanese, Davis, Nov. 10th, 1886; Davis and Jones and Laing, Crystal Palace, Nov. 4th, 1887; Veitch, R.H.S., Nov. 8th, 1887.
Edwin Molyneux, Japanese, Woodgate, Kingston, Nov. 8th; Stevens, N.C.S., Nov. 9th, 1887; Cannell, Hull, Nov. 17th, 1887; Stevens, R.H.S., Oct. 23rd, 1888.
Elaine, Japanese, Rowe, R.H.S., Nov. 6th, 1872.
Elsie, Japanese Reflexed, Cannell, Crystal Palace, Nov. 5th, 1886; Japanese, Owen, N.C.S., Oct. 26th, 1887; Stevens, R.H.S., Oct. 9th, 1888.
Emily Rowbotham, Pompon Anemone, Jones, N.C.S., Nov. 11th, 1890.
Emma Stevens, Japanese Reflexed, Stevens, N.C.S., Oct. 23rd, 1889.
Empress of India, certificated as Lady H. St. Clair, R.H.S., Nov. 6th, 1861.
Erectum superbum, Japanese, Henderson, R.H.S., Nov. 2nd, 1870.
Ethel Smith, Single, Smith, N.C.S., Nov. 12th, 1889.
Etoile de Lyon, Japanese, Laing, N.C.S., Dec. 5th, 1888.
Eynsford Gem, Pompon, Cannell, R.H.S., Nov. 9th, N.C.S., Nov. 10th, 1886.
Eynsford White, Japanese, Cannell, N.C.S., Oct. 23rd, 1889.
Fabian de Mediana, Japanese Anemone, Springbett, N.C.S., Nov. 12th, 1884.
F. A. Davis (see Jeanne Délaux), Japanese, Jackson, R.H.S., Nov. 14th, 1882.
Faust, Incurved, Salter, R.H.S., Nov. 20th, 1886.
Fernand Féral, Japanese, Davis, N.C.S., Nov. 30th, 1884.
Fiberta, Pompon, Cannell, N.C.S., Oct. 14th, 1885.
Fimbriatum, Japanese, Owen, N.C.S., Nov. 7th, 1888.
Flambeau Toulousain, Pompon, Owen, R.H.S., Oct. 26th, 1885; Cannell, N.C.S., Oct. 27th, 1886.
Flamme de Punch, Japanese, Jackson, Kingston, Nov., 1884.
Florence Percy, Japanese, Molyneux, N.C.S., Nov. 7th, 1888.
Fulton, Japanese, Jackson, Moorman, R.H.S., Dec. 4th, 1877.
General Slade, Incurved, Salter, R.H.S., Nov. 6th, 1861.
George Daniels, Japanese, Owen, N.C.S., Nov. 7th, 1888.
George Stevens, Reflexed, Stevens, R.H.S., Nov. 13th, 1883; N.C.S., Nov. 12th, 1884.
G. Wermig (Golden Madame Desgranges), Decorative Japanese, Wermig, R.H.S., Oct. 14th; N.C.S., Oct. 30th, 1884.
Gloire de Rocher, Japanese, Gibson, N.C.S., Oct. 29th, 1890.
Gloria Mundi, Incurved, Salter, R.H.S., Nov. 7th, 1865.
Gloriosum Japanese, Drover, N.C.S., Dec. 19th, 1885; Veitch, R.H.S., Nov. 9th, 1886.
Golden Ball, Incurved, Salter, R.H.S., Nov. 7th, 1865.
Golden Beverley, Incurved, Salter, R.H.S., Nov. 7th, 1865.
Golden Empress of India, Incurved, Henderson, R.H.S., Dec. 4th, 1877.
Golden Gem, Japanese, Owen, N.C.S., Jan. 12th, 1887.
Golden Hermione, Incurved, Salter, R.H.S., Dec. 13th, 1860.
Golden Mrs. G. Rundle, Incurved, Waters, R.H.S., Nov. 12th, 1873.
Golden Shah, Pompon, Jones, N.C.S., Sept. 19th, 1890.
Golden Star, Single, Agate, N.C.S., Nov. 11th, 1890.
Gold Thread, Japanese, Veitch, R.H.S., Nov. 11th, 1874.
Gorgeous, Japanese, Kendal, N.C.S., Nov. 9th, 1887.
Grandiflorum, Japanese, Standish, R.H.S., Dec. 9th, 1862.
Governor of Guernsey, Decorative Japanese, T. S. Ware, N.C.S., Jan. 11th, 1888.
Hamlet, Japanese, Davis, N.C.S., Oct. 15th, 1890.
H. Shoesmith, Incurved, Davis & Jones, N.C.S., Oct. 24th, 1888.
Hereward, Incurved, Salter, R.H.S., Nov. 7th, 1865.
Hero of Magdala, Japanese, Salter, R.H.S., Nov. 17th, 1868.
Jane, Single, Cannell, Crystal Palace, Nov. 5th; R.H.S., Nov. 9th, 1886.
Jane Salter, Japanese, Bull, R.H.S., Nov. 2nd, 1870.
Japonais, Japanese, Davis, N.C.S., Dec. 9th, 1885.
J. Collins, Japanese, Kendal, N.C.S., Dec. 7th, 1887.
J. Weston, Japanese, Ridout, N.C.S., Nov. 7th, 1888.
Jeanne d'Arc, Incurved, Jackson, R.H.S., Kingston, 1883.

Jeanne Délaux, Japanese, erroneously shown as F. A. Davis, Jackson, R.H.S., Nov. 14th, 1882.

Jeanne Marty, Japanese Anemone, Owen, N.C.S., Oct. 9th, 1889.

John Doughty, Incurved, Doughty, N.C.S., Nov. 12th, 1889.

Jupiter, Japanese, Veitch, R.H.S.; Davis, N.C.S., Nov. 11th, 1885.

(To be continued.)



TO CONTRIBUTORS.—In consequence of our having to prepare for press earlier than usual this week several communications arrived too late for insertion, and the publication of many interesting articles must of necessity be postponed.

— THE WEATHER.—Snow, fogs, and frosts have, alternately and combined, constituted the weather of the past week in the London district, and very rarely do we experience such a severe and continuous spell of winter before Christmas. Snow fell to the depth of 4 or 5 inches, and still remains; the partial thaw on Sunday morning having dissipated but little. The temperature rose then to about 36°; towards evening the atmosphere became more clear, and in several places the frost registered was 16°. On Monday this was followed by a very dense fog, which continued the whole day. Intense frost prevailed over England on the same day, the thermometer falling to a minimum of 4° at Cambridge, 7° at Loughborough, 8° at Hillington, 9° at Oxford, and 14° in London. But in the outlying districts the temperature fell rapidly in the evening to 10° at 6 P.M. After this it rose slowly, and on Tuesday morning the thermometer stood at 26° with less fog.

— “B. D., *South Perthshire*,” writes as follows—“December 8th to 22nd. During the last fortnight intensely cold damp weather, with occasional slight frosts, has been followed by snow and frosts of from 10° to 17° during the last three days. There is every appearance of more snow on morning of 22nd. “May ’90’s Xmas can’t run, Wi’ routh o’ luck in ’91.”

— A CORRESPONDENT in Hampshire also writes:—“We have had a succession of severe wintry weather. On Monday we registered 18° of frost, 14° on Thursday, and on Saturday the thermometer registered 13° again. Most of the day the thermometer stood at 27°, or 5° frost. About 2 P.M. a thin blue mist pervaded the sky, which deepened into a fog-like appearance, giving the atmosphere a peculiar appearance. Directly afterwards rain began to fall lightly, which owing to the lowness of the temperature froze as it fell, giving the trees on the north-east side a glassy appearance, which crackled in the wind which was blowing at the time. This lasted for four hours, having the effect of making the roads where the snow had been cleared a sheet of ice, most difficult to walk upon. At no time during the last ten days has the thermometer risen above 34°. On the 19th (Friday) a depth of 6 inches of snow fell, measured on the level, which is the heaviest fall of snow at one time that we have experienced here since January 18th, 1881. Fortunately no wind accompanied the snow, which prevented drifting.”

— MESSRS. WM. PAUL & SON of Waltham Cross inform us that at the sale of the late MR. HENRY BENNETT’S ROSES last week they acquired the property of the new Tea-scented variety “Lady Henry Grosvenor,” together with a large quantity of the unnamed seedlings, Tea-scented and Hybrid Tea-scented. The only other named seedling (“Captain Hayward,” H.P.) was also sold at the same time, its destination, as stated at the sale, being the United States.

— DINNER TO MESSRS. SUTTON & SONS’ EMPLOYEES AT READING.—From the dinner, which we stated in our last issue was given by the above firm to their workpeople in honour of the Prince of Wales’ visit, a telegram was sent by Mr. Martin J. Sutton, informing Sir Henry Ponsonby at Windsor Castle that the health of Her Majesty had been enthusiastically drunk, and the gathering was shortly informed in reply that the telegram had been read by the Queen with very much pleasure.

— CARTER’S PROVIDENT SICK FUND.—The fifth annual meeting of this Society has just been held at the warehouses of Messrs. James

Carter & Co., Queen’s seedsmen, High Holborn. The chair was taken by Mr. Sharman. The statement of affairs presented to the meeting showed that, although the past year (owing to the epidemic of influenza during the winter) had been one of the worst the Society has experienced, after meeting all engagements and making provision for one or two exceptional cases, the Society has been able to close its books with a very substantial balance in hand. Considering the smallness of the subscription and considerable benefits paid to its members the result must be considered gratifying. All the officers were re-elected.

— VEITCH MEMORIAL PRIZES.—At a meeting of the Veitch Memorial Trustees held on Tuesday last, Dr. Maxwell T. Masters in the chair, the following distribution of medals was decided upon. Three to the Edinburgh International Exhibition—namely, one for the most meritorious dish of fruit in the Show; one for the most meritorious Orchid, stove, or greenhouse plant selected from the exhibits, and one for the most meritorious and interesting hybrid plant or fruit, the result of a cross between two species, not between two varieties of one species. One medal is given for the most meritorious Orchid, stove, or greenhouse plant in the York Gala Exhibition; one for the most meritorious collection of fresh cones, with foliage, of hardy Conifers on the occasion of the Royal Horticultural Society’s Conifer Congress to be held at Chiswick; and one for twelve dishes of vegetables, distinct, at the Crystal Palace Autumn Show.

— GISHURSTINE.—We have received from Price’s Patent Candle Company samples of this well known and approved dressing for boots in wet and snowy weather. A correspondent who has been using the dubbing of late, desires to state that he has found it highly satisfactory in keeping his feet “dry and warm when trudging through the snow.”

— PRAISING PEAS.—We have received letters from three gardeners in different districts, not only praising the same Pea, but praising it in identical terms. Under the circumstances we are bound to express our regret that gardeners in good positions should be the mediums of distributing matter of this nature. Such a practice could not be otherwise than most objectionable to their employers if made known, and compromising to the firm in whose interest the paragraph is written and distributed.

— AT a recent meeting of the BRITISH FRUIT GROWERS’ ASSOCIATION arrangements were made to hold Conferences on Fruit during 1891 at the following places:—Dublin in August in conjunction with the Royal Horticultural Society of Ireland; at Cardiff, also in August, on the occasion of the Cardiff Horticultural Society’s Show; at Edinburgh, on one of the days of the International Exhibition in September; and at the Crystal Palace, Sydenham in the same month. The dates and programme will be announced later, and invitations from several other important centres are under consideration. Committee meetings will be held in the Horticultural Club room, Hotel Windsor, Victoria Street, S.W. at 5 P.M. on Thursdays, January 8th, February 5th, March 5th, April 2nd, May 7th, June 4th, July 2nd, August 6th, September 3rd, October 1st, November 24th, and December 17th. Suggestions and offers of assistance at the Conferences named above should be sent to the Hon. Sec., Mr. Lewis Castle, Hotham House, Merton, Surrey.

— FRUIT GROWING is not being recommended to the small holders of land in vain, says a daily paper. One of the striking features of the Agricultural Returns for 1890, issued yesterday, is the increased acreage devoted to orchards, market gardens, and the culture of small fruit. It seems that in the growth of small fruit alone, that is, Strawberries, Gooseberries, Currants, &c., there are 4300 more acres employed this year than last, and there were never so many acres of orchards in the country since records began to be kept. In 1873 there were not 150,000 acres of orchard in Great Britain. Now there are 202,305. On the other hand, there is a continued decline in the Hop area, which was the subject of a Parliamentary Committee’s investigation last session. The surface employed for Hop growing—54,555 acres—has never been reported so low as it is in the returns of this year.

— THE Directors of the Royal Aquarium, Westminster, have arranged for the following EXHIBITIONS AND FLORAL FETES DURING 1891:—First Spring Exhibition, March 11th and 12th; second Spring Exhibition, April 29th and 30th; Early Summer Exhibition, May 20th and 21st; Grand Summer Show and Fête, June 24th and 25th; Early Autumn Show of the National Chrysanthemum Society, September 9th and 10th; Great Autumn Fruit Show, October 14th, 15th, and 16th; Great Annual Exhibition of the National Chrysanthemum Society, November 10th, 11th, and 12th. 1892.—Mid-Winter Exhibition of the National Chrysanthemum Society, January 5th and 6th.

— THE SHIRLEY HIBBERD MEMORIAL.—At a meeting of the Committee appointed by the Royal Horticultural Society to consider the best means of perpetuating the memory of the late Mr. Shirley Hibberd, and held on the 19th inst. in the Lindley Library, it was unanimously decided to secure a portrait of the eminent horticulturist, to be placed in the hands of the Trustees of the Lindley Library, on behalf of the Royal Horticultural Society. It was further decided that the surplus remaining after the expenses connected with the preparation of the portrait have been defrayed, shall be invested in the names of trustees, to be hereafter appointed, for the benefit of Mr. Hibberd's orphan daughter. The Committee appointed to carry out the scheme is composed of the following gentlemen:—Rev. W. Wilks, Secretary to the Royal Horticultural Society; George Paul and James Douglas, representing the Council of the Society; and Messrs. W. H. Collingridge, W. Marshall, R. Dean, and Dr. Masters, representing the Fellows. Many subscriptions have already been promised, and others are solicited, which may be paid to any member of the Committee, or to Dr. Masters, Chairman of the Committee, at the Royal Horticultural Society, 117, Victoria Street, Westminster.

— THE ESSEX FIELD CLUB.—A special meeting and the 120th ordinary meeting will be held in the Loughton Public Hall on Tuesday evening, December 30th, 1890, at 8 o'clock, when the Secretary will submit to the members, on behalf of the Council, the following modifications of subscription to the Club:—That the subscriptions shall remain as before—viz., 10s. 6d. per annum—but that each member wishing to receive the "Essex Naturalist" shall subscribe a further sum of 4s. 6d. in advance in each year towards the expenses of publication, postages, &c. That the life membership be £8 8s. In accordance with Rule 6, the Council and officers for 1891 will be nominated preparatory to the tenth annual general meeting. 1, "Exhibitions and Remarks Thereon." 2, "Ezekiel George Varenne," by Prof. G. S. Boulger, F.L.S., F.G.S. 3, "Note on Hydrobia Jenkinsi," by Edgar A. Smith, F.L.S. President of the Conchological Society.

— HARDY FRUIT.—What is and what is not hardy fruit is a question often discussed at horticultural exhibitions. "An Intending Exhibitor" (see page 515) in criticising the prize schedule issued by the Royal Caledonian Horticultural Society, asserts that "In Scotland nearly all Pears are grown as wall fruit, and a very large number of Apples are similarly cultivated. The great majority of Plums and Cherries in the same way have the benefit of a wall." Such being the case he sees no reason why Figs, Peaches, and Apricots when grown in the open air should not be considered hardy fruits. Apples, Cherries, Pears, and Plums, Gooseberries and Currants, are improved in quality by being grown against a wall. The case is quite different when applied to Peaches, Nectarines, Figs, and Apricots, and if "An Intending Exhibitor" is in the habit of attending the Edinburgh autumn shows he will know that for a collection of these so-called hardy fruits it is useless for a competitor attempting to win a prize unless he can stage two dishes of Figs, Peaches, Nectarines, and Apricots. It is well known all these are grown against walls, some heated with flues, and some by protected glass copings, yet we are asked to believe they are grown in the open air. As these semi-hardy kinds are well represented in the other collections it would be better to have none but really hardy sorts in collections of hardy fruits. This is done in several societies, and is known to be satisfactory to all.—J. M.

— FAVERSHAM CHRYSANTHEMUM ASSOCIATION.—The annual general meeting of the members was held at the Royal William last week, when Mr. F. T. Hart, Chairman of the Committee, presided over a large attendance. The Hon. Secretary, Mr. C. Stidolph, presented the annual balance sheet, which showed an income of £168 8s. 3d., being £62 9s. 4d. balance brought forward, £53 10s. 6d. subscriptions, £51 2s. 8d. realised by the recent Show, and £1 5s. 9d. bank interest. The expenditure amounted to £119 5s. 9d., of which the principal item was £71 13s. for prizes, and thus there remained in hand a balance of £49 2s. 10d. The rules of the Association were revised and confirmed, a proposal that membership should be confined to the postal district instead of the union district being negatived. Mr. L. Jackson was re-elected Treasurer, and Mr. C. Stidolph Hon. Secretary, both being warmly thanked for their past services. The Committee were re-elected, except that Messrs. G. F. Scott, G. T. Anderson, E. Mannoch, and G. W. Woolley were appointed in the place of some members who did not seek re-election. The Hon. Secretary drew attention to the movement that is on foot to commemorate the valuable services rendered by the late Mr. William Holmes, Secretary of the National Chrysanthemum Society, by raising a fund, a portion of which is to be set aside for

assisting the technical education in landscape gardening of the late Mr. Holmes's eldest son.

— THE GARDENERS' ORPHAN FUND.—The usual monthly meeting of the Committee took place at the Horticultural Club on the 18th inst., Mr. William Roupell in the chair. The minutes having been read, the Hon. Secretary made a report as to the proceedings of the recent special general meeting of members. The balance at the bank was stated to be £584 10s. 11d. The following special receipts were announced:—Bournemouth and District Gardeners' Mutual Improvement Association Concert, £15 10s. 6d.; Mr. J. Smith, Mentmore, box at Chrysanthemum Show, 10s.; Mr. J. C. Mundell, Mor Park, box, £1 12s.; Mr. Miller, Margate, box, 9s. 1d.; Mr. Chapman, Yeominster, box, 16s.; Mr. Scott, Bradford, box, £1 2s.; Messrs. H. Cannell and Sons, Swarley, box, £1 10s.; Mr. Johnstone, Tamworth, box, £1 10s.; Mr. C. Sutton, Sevenoaks, box, 10s. 6d. The guardians of the children recently placed upon the Fund were appointed—in all cases the mother. A cheque for the quarter's allowance to the thirty-seven children now enjoying the benefit of the Fund, amounting to £120 5s., was drawn, and several other accounts were paid. A vote of thanks to the Chairman closed the proceedings.

— SPENCER'S FAVOURITE OR QUEEN CAROLINE APPLE.—I enjoyed reading "Wanderer's" "A Night at Chilwell" very much indeed. I only take exception to one statement of "Wanderer's" host, and my very good neighbour, Mr. A. H. Pearson, as to the right name for Spencer's Favourite Apple. Some time ago in order to try to find out something of the origin of Domino App'le (you, Mr. Editor, asked me to do so), I spent an evening in the reference department of our Nottingham Free Library examining volumes of "The Midland Florist." I did not find what I wanted as to Domino, but I found the following note as to the origin of Spencer's Favourite Apple:—"Brown's Queen Caroline, syn. Spencer's Favourite, was raised by Mr. Timothy Brown, nurseryman of Measham, three miles from Ashby-de-la-Zouch. It came into bearing, and was named Queen Caroline when that unfortunate Queen's name was before the public in the Law Courts. It came into the hands of Mr. John Spencer of Adbolton, near Nottingham, in the following manner:—A lot of stocks were worked in the nursery of Mr. Wm. Hood of Ashby-de-la-Zouch with grafts from the original tree. Mr. Spencer got his trees from this source. About Birmingham this Apple is sent out as Brown's Seedling."—(*The Midland Florist*, 1850.) I may be wrong, but this explanation seems conclusive. Spencer is dead, and he has left none, I believe, to carry on the family name in the gardening world. I may say that I worked the substance of this information into my notes with the Apples I sent to the Apple Congress in 1883, and which is printed in "British Apples," page 84.—N. H. POWNALL, *Lenton Hall Gardens, Nottingham.*

— LIVERPOOL HORTICULTURAL ASSOCIATION.—The fourth annual dinner in connection with the above Association was held last Saturday evening. The Hon. Treasurer, Fletcher Rogers, Esq., presided, and there were about 150 persons present. Following the loyal toasts, "The Liverpool Horticultural Association" was proposed by the Hon. Treasurer, who said that it gave him great pleasure to be able to announce that they had been materially helped by the subscription list, and had now a handsome balance to the good. Mr. White, the Chairman of the Association responded, and said that he must congratulate the Committee and members as well on the success of the summer Show, which would compare favourably with any held since the formation. He also stated that the autumn Show was no exception. Not only were the exhibits of the highest quality in every respect, but the attendance was larger than on any previous occasion. "The Horticultural Trade" was responded to by Mr. Davies of Wavertree, and Mr. R. W. Ker, Aigburth Nursery. Mr. Davies spoke of the kindly feeling which existed between gardeners and members of the trade, and also of the pleasure it gave the trade to help forward the work of the Association. Mr. R. W. Ker echoed Mr. Davies's remarks, and paid a graceful tribute to the memory of the late Mr. B. S. Williams, Mr. H. Low, Mr. W. Holmes, and Mr. Shirley Hibberd. He also pleaded for the assistance of their excellent Hon. Treasurer in trying to secure a challenge cup for the Chrysanthemum Show, and went on to say that he and his brother had decided to give a silver challenge cup, value £10 10s. with £10 10s. cash each year, until finally won, for thirty-six cut blooms Chrysanthemums—viz., twelve Japanese, twelve incurved, and twelve reflexed, open to all within a radius of Liverpool Exchange, to be won twice consecutively, or three times in all, subject to conditions of the Liverpool Horticultural Association. This generous offer of Messrs. Ker was greeted with loud applause. Mr. Rogers responded to the toast

of "The Hon. Treasurer and Chairman," saying how pleased he was at the kindly reception he had always had from the members, and that he was fully convinced the Association had entered upon another term of prosperity. With regard to Mr. Ker's suggestion, &c., a challenge cup, he gave the members every reason to believe that no effort would be spared on his part to carry it to a successful issue.—R. P. R.

— MANCHESTER ROYAL BOTANICAL SOCIETY.—The following are the dates upon which the meetings of this Society will be held in 1891:—First Spring Flower Show, Town Hall, 17th of March; second ditto, at Town Hall, 28th of April; annual Whitsuntide Exhibition opens at the Gardens, May 15th; Rose Show at the Gardens, July 18th. Exhibition of Hardy Fruits and Congress at the Town Hall, 13th, 14th, 15th, and 16th of October.

— FRUIT ROOM.—Your correspondent "H. S." asks for information respecting a fruit room. In reply to his questions I should say—1, That a dark, dry, underground chamber would be preferable to a room in a dwelling-house having full daylight, always provided the above description is correct, as a damp underground room would probably cause mould and make the Apples taste fusty. There should be a sufficiency of ventilation, but too much draught would be an objection, as it would cause the temperature to vary too much. 2, In the cool underground room perhaps trellised shelves would be a slight advantage, but as they are usually covered with sheets of paper it would not make much difference. I do not see how barrels or casks would be of service in this room, but in a very light and dry room they certainly might be useful for storing late varieties, which sometimes shrivel instead of ripening when too much exposed to light and warm air. 3, There is



FIG. 76.—AN EFFECTIVE GROUP OF PLANTS. (See page 564)

— ENCLOSED is a bloom of SINGLE CAMELLIA grown here. I should like your verdict with regard to its merits. Some blooms were sent to a nurseryman and condemned as being worthless. My opinion of it is different. I consider it to be a good variety. The plant from which the enclosed bloom were cut is planted out, and has always been very floriferous until this season. It made a strong growth, but set few flower buds. A trench about 18 inches wide has been taken out 2 feet from the stem and filled in with peat, the compost before being mostly loam. Strong growths have been cut back to two-year-old wood, and the plant is again ready for commencing another season's growth.—D. [Single Camellias are coming into favour with many amateurs, and they certainly admit of being employed in many forms of floral decorations for which the "double" varieties are unsuited. As a "single" Camellia your variety is well worth cultivation, but from a florist's or trade point of view the opinion expressed would no doubt be correct, as the demand at present is not large enough to render them very profitable, while there are so many of the symmetrical double Camellias to be had.]

nothing, except bruising, which tends to hasten the decay of Apples more than wiping off the oily exudation. I have seen Apples exposed for exhibition, part of which have been wiped and others left in their natural state, and the wiped fruits have been perfectly rotten before the others showed a trace of decay.—A. H. PEARSON, *Chilwell*.

— THE HULL AND EAST RIDING CHRYSANTHEMUM SOCIETY'S Exhibition for 1891 is fixed, Mr. Harland informs us, for Wednesday and Thursday, November 18th and 19th.

— THERE was a large attendance of members at the fourteenth annual general meeting of the KINGSTON AND SURBITON CHRYSANTHEMUM SOCIETY, held at the Kingston Hotel on Wednesday evening, December 16th, W. Furze, Esq., in the chair. The Secretary read the balance sheet, which showed, after paying £156 in prizes, a balance in hand of £60. Hearty votes of thanks were then passed to the President, G. C. Sherrard, Esq., J.P., the Vice-President and lady patronesses, also to the Hon. Treasurer, Mr. J. Drewett, and Hon.

Secretary, Mr. Geo. Woodgate, all of whom were unanimously re-elected. On the election for fifteen members to form the Committee six new members found places thereon.—G. W.

— PRESENTATION AT SHREWSBURY.—Recently Mr. R. Milner, who for twelve years was gardener at Sundorne Castle, was presented with an illuminated address (and a silver sugar basin and cream jug for Mrs. Milner). The presentation was made at the offices of Messrs. Adnitt and Naunton, Secretaries of the well-known Shrewsbury Show. The Rev. J. W. Dodson presided, and there were present Messrs. Jeffries, Bowler, Lambert, &c. In making the presentation, the Rev. Chairman referred in the highest terms to the great interest Mr. Milner took in all matters relative to horticulture, always willing to give sound practical advice when required, and he was sure that he would be only expressing the sentiments of the numerous subscribers to the presents, when he spoke of the regret he felt at Mr. Milner's leaving the neighbourhood, and he begged of the acceptance of the presents as a slight token of the high esteem in which he and Mrs. Milner were held during their twelve years' residence at Sundorne, and wishing Mr. and Mrs. Milner continued happiness and future prosperity. Mr. Milner returned thanks for the valuable presents and address, which, he said, he and his wife valued very highly, and they leave the neighbourhood of Shrewsbury with many pleasant memories. Mr. Milner was appointed gardener to Miss Talbot at Penrice Castle, near Swansea, some few months ago, and we understand that many improvements are being carried out in the old gardens under his supervision.

GROUPING PLANTS.

GROUPING plants effectively has become an important part of the duties of many gardeners, both in the arrangement of conservatories and the embellishment of rooms on festive occasions. The managers of flower shows encourage the tasteful association of plants both in the summer and autumn. At many November shows all plants, besides Chrysanthemums, are excluded from the groups, but in others ornamental foliaged plants are admissible. In the former case several groups are pleasingly arranged and well finished, but the majority are composed of a smooth face of colour with a good display of pots and stakes. At Hull the groups must be margined and interspersed with foliage plants, and thus afford very good lessons in effective arrangement. The illustration (fig. 76) represents the first prize group there, much reduced from a photograph. It was arranged by Mr. G. Wilson, gardener to J. Reckitt, Esq., some of the chief plants employed being mentioned in the report (November 27th, page 467). They were in the brightest and best of condition, and disposed so as to as far as possible display their individual beauty. The group combined richness of colour with elegance in leafage, and was admirably finished throughout. Beautiful associations of plants of the same free nature are provided at the Brighton shows.

OBSERVATIONS ON PRUNING.

PERHAPS to no other branch of gardening is there attached so much of apparent mystery for the amateur as the subject of pruning. When the magician's wand in the shape of a pruning knife wielded by the cunning hand of a gardener has passed over the object of amputation, it is only necessary to await the result. But while disinclined to agree with this assertion in its entirety, there can be no doubt that the art of pruning is most beneficial in its results. Since the day when our great progenitor was placed in the garden to keep and dress it the fluctuations of pruning betwixt extension and spur systems have been continuous in their action and varied in their methods. Nor is strange that it should be so when we consider the numerous genera that are thus operated upon, and the many soils and situations in which they are grown. Peaches have been subjected to the spur system, but it may be safely said that the practice was not continued for any lengthened period, yet the examples are many in which fruit trees have been rendered more productive by a partial freedom from this method. It was a very old writer who remarked when treating on this subject, "Yet have not any that I know described to us (except in general words) what or which are those superfluous boughs which we must take away; and that is the most needful point to be known in lopping."* But with all due respect for his endeavours to clear away this darkness it must be admitted that the shadow of uncertainty hangs over his teachings like the difficulty of a physician in writing a prescription without seeing the patient. It

is impossible that there can be other than general directions on such a subject, but those instructions ought to be sufficient to any who will but mix them with his powers of his observation and knowledge of the genera and locality.

But there is one part of a plant to which a general rule of pruning might be applied, which although it does not lie at the root of the matter is yet very near it, being in short the stem. Much has been written about root-pruning and branch-pruning so as to get an even balance betwixt the two extremities of a tree, whereas the medium through which this balancing is conducted is in many instances completely ignored, or at least but little attended to. On the treatment, and consequently the condition of the stem, depends in a great measure the future usefulness of a tree. Where the practice of keeping it closely trained until the desired height has been attained has been followed it is rarely that the bole swells proportionately with the other portion of the tree, and consequently the nourishment for its support is not conveyed so freely as through a more open channel. Fruit trees with hard contracted stems rarely produce a satisfactory crop, and though doubtless there are remedies for this defect the complaint might have been prevented if more freedom had been given to lateral growths. Were more notice taken of the early treatment of the stem it is not improbable that less discussions would afterwards be heard about pruning. It is not to be inferred from this that stem pruning alone is necessary for the proper management of a tree, but I believe it would go a long way towards mitigating some of the evils of which so much is heard. If instead of cutting or rubbing away all stem shoots under the erroneous impression that by doing so more nourishment is imparted to the head, some of them were left and kept at breathing distances apart until the tree attained a fair size, gratifying results would in all probability accrue from the change of treatment. It is difficult to determine the time when the final denudation should take place; age alone is not to be judged, as some grow more freely than others, but when the stem is clean and elastic, bearing a suitable proportion to its top, the operation if desired might be accomplished.

Some growers are very tardy in doing this in either forest or fruit trees, as the bark soon heals over if the shoots are cut clean and close. The Vine is as susceptible as most fruits to differences of treatment, and when a certain amount of freedom is given to bottom growths, not for the purpose of fruit, as plenty of that can be had from above them, but as it were to aid and assist the stem to satisfactorily perform its proper functions, much future benefit is derived. The stem swells, preventing the unnatural practice of tying it down, and so avoiding the sometimes baneful results of the system. It may be observed that suckers are less prevalent where there is a proportionate equality betwixt the stem and the top, and more plentiful where the former is contracted, as if the sap, after finding only a stifled outlet in the proper direction of its course, spent its strength in another channel.—M. D.

HARDY FLOWERING SHRUBS.

My object is not to write of these generally, but to draw attention to a few plants that are not planted in beds and borders outside to the extent that they deserve to be. Those selected are frequently associated with other plants for forcing, to be employed in the conservatory and for cutting purposes early in the season. They are equally ornamental when grouped with Rhododendrons, Azalea pontica, Ghent varieties, and other American plants in various positions in the pleasure ground and rock garden. The first of these is *Deutzia gracilis*, which is equally as valuable outside as for forcing purposes. It is perfectly hardy, and in a sunny open spot is very beautiful in the rock garden, and few plants are more effective when placed towards the front of clumps of American plants. Wherever planted it should be given room to develop itself, and not placed where stronger growing plants will eventually overcrowd it. When planted outside the best plan is to allow the plant to grow naturally, and not cut it back annually, as we are in the habit of doing when it is grown for forcing purposes. However beautiful large bushes of *D. crenata* and its double form *flore-pleno*, may be, they cannot surpass the dwarf growing *D. gracilis*, which is suitable for many positions where the others would be out of place.

Azalea amœna is perfectly hardy, and deserves to be planted outside more frequently than we see it. In many gardens it is only known as a greenhouse plant and used annually for forcing. It is valuable inside and equally effective outside. Being of dwarf growth it is well adapted for rockeries, and few plants are more conspicuous when in bloom. An open sunny spot should be selected where its roots can be surrounded with plenty of soil which has a tendency to be moist. It will soon succumb if planted in shallow soil that will dry up after a few days of bright

* Evelyn's "Silvia," page 211, fourth edition.

sunshine. This *Deutzia* looks well if planted just behind a large stone where its branches can hang naturally over the top, which it will do when well established. It keeps fairly dwarf outside, and throws up suckers freely from the base. Near the margin of beds of *Rhododendrons* and deciduous *Azaleas* it is at home, and also flourishes in the same soil, and no peat preparations need be made. It grows freely in good soil (where lime does not abound) that has been enriched with manure or leaf mould.

The old *Azalea indica* is also hardy, and this we have only recently discovered. A fairly large plant has been on the north side of a *Rhododendron* clump for some years. It grows freely and flowers profusely, and is therefore effective in such positions. It needs no special preparation, and is evidently at home under the same conditions as *Rhododendrons*. Have other varieties of Indian *Azaleas* been tried outside, and with what success?

Rhododendron præcox and *Early Gem* are very useful for outside planting, and both look well in the rock garden and also in the front of beds of American plants. In too many gardens these are used solely for forcing purposes, and for ornamental purposes outside are either overlooked or ignored. This is to be regretted, for they flower early when there are few other things; and although they are sometimes caught by frost they are nevertheless worth growing in sheltered positions.—W. B.

STRAWBERRY CULTIVATION.

STRAWBERRY cultivation in many instances in the north does not receive the attention it deserves; the plants are often allowed to go wild, and I have witnessed as many as twenty individuals in one field of Strawberries during the spring upon their knees spudding the weeds, which one individual during the summer with a Dutch hoe would have killed in a few hours. This and growing crops between the rows of Strawberries so as to overgrow the latter is the opposite of economically occupying the ground or of profitable Strawberry culture.

"Why do you not grow Strawberries to have a full crop from the plants within one year of planting?" was a question I put to an author of a horticultural work and a grower of Strawberries. "It cannot be done," was the reply. "I have tried it, and have always failed." Without ocular demonstration I could not argue my point; but the other day the same person visited me. I took him to a small plantation of Strawberries, one part planted in September, 1889, and good plants, and the other planted at the end of July and beginning of August of the present year; by no means so early as they might have been, nor so well grown. I asked him to examine the two and say whether the 1889 or the 1890 plants were likely to be the more fruitful, but the only answer was, "He could not without seeing have believed it." Many are of the same opinion, while others do not give Strawberry plants the care they are entitled to. Gathering the runners at the end of the season, then dressing, exposing them it may be for days to a dry withering wind, or allowing plants to be overgrown with weeds or vegetables, then having to wait one or two years for a full crop, is far from profitable.

My method has been given before, but is none the worse for being retold. The ground intended for Strawberries should either be naturally rich or enriched before planting, and at all times kept free from weeds. Lea, if rich, produces heavy crops of Strawberries, and it is better to have but half a crop of vegetables from ground intended for Strawberries, with a full crop of the latter within a year, than to keep a plantation of Strawberries for years without getting one full crop in any year. When I have decided upon a piece of ground previous to planting Strawberries, I grow a row of Onions or Eschallots in the centre of where the Strawberry plants are intended to be; early Turnips or Beet, or any narrow growing plant will do.

I encourage runners from fruiting plants of the previous year, that all flowers are carefully nipped out as well, the weakest runners taken away as they appear; pieces of turf are chopped up and placed so that the runners will strike into them. Whenever they are well rooted, and plenty of them, the plants are separated, lifted, and planted immediately, in July, the earlier the better. They will grow vigorously without a check, and remain in a green and growing condition all winter, and by the following July a full crop of large Strawberries will be the reward of the cultivator. If the day is hot when planting, place the Strawberries in a shallow plate in which is a little water and grass.

Never allow a runner to grow from plants for next year's fruiting, and whenever the fruit is gathered dig the year-old plants down, and plant the ground with suitable vegetables. The mother plants that showed fruit blossoms and were allowed to bear

plants may be trimmed, and manured will bear a good crop late in the season or the following year.

If the above method is carried out thoroughly there will not only be more fruit but more vegetables taken from the ground in the same space of time than from any other method, and the ground will be less impoverished than by growing old Strawberry plants for a succession of years. I have sometimes grown Strawberries successfully by planting one row of plants at 16 inches apart in the row, then bosoming these plants on both sides with plants the same distance, leaving a space of 32 inches from centre to centre of the outer rows. This allows more plants, and the wide space is ample to permit gathering the fruit and keeping down weeds.—W. T.

GLADIOLI.

(Continued from page 509.)

THE enjoyment of the blooming season is not, as in the case of many flowers, of short duration. In such a splendid autumn as we had this year good spikes of bloom continued until the middle of November; and at the meeting of the Horticultural Club on November 9th, Mr. Lindsell exhibited some remarkably good spikes; and when to this length of the flowering season we add that no flower is more durable in a cut state, we can see what claims it has on all those who love a garden.

The taking up, harvesting and keeping the corms during the resting season is one of the most important points connected with their culture, and here, as in other points, there is some difference of opinion. I am not now dealing with those who grow them by the acre, but with the amateurs who grow only a moderately sized collection. The grower for sale has a good many things to do at the time, and he may be well satisfied to take up his corms when and how he can; but the amateur can bide his own time. I think, therefore, that the advice to get them up as soon as they have done flowering is not sound; they are not then matured and are apt to shrivel up very much in the drying off; on the contrary, I think that it is much better to leave them some considerable time in the ground after that—in fact not to begin taking them up until late on in November or early in December unless the foliage becomes yellow, when it may be best to lift them. I find it better to begin with some of the earlier flowering sorts first, such as *Amalthee*, *Shakespeare*, &c. The best place to dry them off is, I think, a cool vinery where they have the advantage of the shade of the Vines, and where a little fire heat may be put on. If necessary, I lay some out on the ground, and when they are dry cut them off the stalks quite close to the corm. In some cases where I have only a few of a sort I tie them in a bundle and hang them up to rods of galvanised iron which remain in the house, leaving the string about a foot in length for that purpose.

The keeping of the corms during the winter is a rather important matter. Some advocate paper bags, but I think this is a very bad plan. If the bases of the corms come into contact they are sure to damage root growth, and this is injurious to the future well-being of the corms. They can be laid on low shelves, in which case the base should be uppermost, or, which I think is the best plan of all, they should be placed on an open trellis frame, with trays of the same kind, so that there is no contact, and there is a free current of air round them. When they are dry, and before I place them on the trays, I always write the name of the variety on the corm itself, so that if by any chance they become misplaced there is no fear of an error, and one always likes to keep things true to name.

I now come to a point on which there has been more difference of opinion than on any other matter connected with the culture of the *Gladiolus*. I mean the losses which everyone who has tried their growth experiences. This has been assigned by some to degeneration, by others to exhaustion, and by others (myself included) to disease; but from whatever cause it is experienced more or less by every grower. A few years ago I submitted some corms to the consideration of Mr. Worthington G. Smith, who examined them most carefully, and proved them to be affected by a disease similar to that which in some seasons attends the corms in Holland. Mr. Burrell says we must calculate on a loss of 10 per cent., and I wish I could get off with this. I met a nurseryman some little time ago, who said, "I am sick of them; during the last ten years I have spent £50 on them, and I have not a corm left!" I have seen nearly every grower who has taken up their culture giving them up, and it would be folly to conceal the fact that in some soils considerable loss must be counted on. That it is a disease I have not the smallest doubt, and its ravages are sometimes very distressing; for instance, this year I never had finer looking beds. I cut, as the exhibitions showed, some very grand spikes, but some of these very corms when I lifted them were utterly worthless. Mr. Lindsell tells me he has not lost 5 per cent., and when I

came to examine the question of soils I found that his is a good stiff loam, while mine is a light garden soil with a good deal of humus in it, and as a consequence I have always to deplore a considerable loss. I have this year found that I have lost quite as many in proportion of the French imported and my own home grown roots; and I believe, as I have said, that it is a matter of soil exclusively. Let me, however, add that the small cormlets which cluster round the corms are generally sound, and that they can be easily propagated in this way, and the price of many exhibition varieties is now so low that losses may be very easily replaced. As I have often said they do not exceed those for Hyacinths, and we never expect to get anything from them after the first year; but the *Gladiolus* will last for many years, and where the corms are lost through disease they can be, as I have said, easily replaced.—D., Deal.

LONDON PARKS, COMMONS, AND OPEN SPACES.

DURING the past few years so rapid have additions been made to our open spaces that a brief account of all those other than "Royal Parks" may be found useful, and not altogether devoid of interest.

In order to make my list as simple as possible I propose dealing with the enclosed parks first in the order with which they were acquired for public use, and now under the control of the London County Council. In the year of 1857 the late Metropolitan Board of Works considerably directed their attention to providing public places of recreation for the inhabitants of our vast metropolis in districts in which such places did not already exist, and in that year caused a bill to be passed through Parliament named the "Finsbury Park Act," empowering them to provide a park situated in the parishes of Islington and Hornsey. Though Finsbury Park is a long distance from Finsbury it was at that time within the parliamentary division of Finsbury, hence the adoption of its name. Finsbury Park is 115 acres in extent, and was first opened for public use August, 1869. It lies high, and a good distance away from the smoky and manufacturing parts of our great city. There is no important point to note in the landscape work, but from the purity of the atmosphere vegetation thrives well. The summer bedding arrangements are always highly attractive, and worthy of a long journey to see. Amongst other trees Planes, Hollies, and a large and varied collection of Coniferæ are fast developing into promising specimens. A grand display of Chrysanthemums is annually made and thrown open during the season free to all. There is also a large lake furnished with small pleasure boats, and there are twenty-two courts set apart for lawn tennis. Several pitches are always at command for cricket throughout the season, and spaces are set apart for football during the winter months. A gymnasium is also provided, and the place is yearly growing in beauty and public favour.

In 1864 the Metropolitan Board of Works obtained from Parliament power to form a park in the parish of Rotherhithe for the inhabitants of the south-eastern district of London, to be called Southwark Park, and which was dedicated for public use June, 1869. Its size is 63 acres, somewhat flat, and completely surrounded by numerous factories and other works. It is in the midst of a large working population, and all the trees and shrubs clearly exhibit signs of the unfavourable conditions under which they exist. A very large space is devoted to cricket and football. Lawn tennis courts are provided, and there is a gymnasium and an ornamental lake well stocked with fancy varieties of waterfowl. The summer bedding arrangements are well maintained, and there is annually a Chrysanthemum exhibition, for which purpose a large house has been built, and thousands of persons every season enjoy the feast provided for them with so much care and forethought.

The two parks above named are decided acquisitions, and would appear for a time to have satisfied London; but to the praise and credit of the late Metropolitan Board of Works be it said, that steadily but surely, and almost yearly, they secured for public use for ever some common or open space that would otherwise have been claimed by that monster of bricks and mortar, the speculative builder. Such places will form the subject of a subsequent paper. I will, therefore, pass at once to the year of 1887, when three of the most important of our London places of public resort were transferred from the Commissioners of Her Majesty's Works and Public Buildings to the late Metropolitan Board of Works under the powers of "The London Parks and Works Act, 1887." By it was transferred in that year to the late Board, and from them to the Council, the management and control of Victoria Park, Battersea Park, Kennington Park, Bethnal Green Museum Garden, Westminster Bridge, and the Grosvenor Embankment, all of which had previously from its formation been maintained by the State,

Parliament having voted annually the money required. Thus in one autumn was the maintenance of 463 acres added to the rates of the metropolis.

Victoria Park now consists of an area of 244 acres, and was purchased by the Crown by virtue of an Act of Parliament passed in 1842. But although 290 acres was the extent then purchased, there was only 220 acres reserved for recreation grounds, the remaining 70 acres were intended for building purposes. The population had increased so rapidly that in the year of 1872 there was a great outcry made by the people against the Government with regard to the sale of this surplus land. Deputations waited upon the Chancellor of the Exchequer, Mr. Lowe, but he refused to sacrifice the revenue to be derived from the sale of the ground. The Victoria Park Preservation Society, and other bodies, next prevailed on the Metropolitan Board of Works to purchase an area of 24 acres from the Commissioners of Woods and Forests for the sum of £24,450, which they did, and handed it over to the Commissioners of Her Majesty's Works and Public Buildings to be added to the park—a gracious act on the part of the Metropolitan Board of Works.

From a gardening point Victoria Park possesses many attractions. The spring bedding display of Hyacinths and Tulips are scarcely surpassed in any other London park, while the carpet, sub-tropical, and other summer bedding arrangements are annually carried out in the most masterly style, which all interested should not fail to see and compare notes. A large quantity of Chrysanthemums are grown here, and as in others of the Council's parks are open to public view, and we also believe that the Palm house is open to those interested at all reasonable times. There is a large lake much used for bathing, a gymnasium, and an abundance of space assigned to all for outdoor sports. It has been reported that fully 150,000 persons frequent this park in a single day. The fields and green lanes which existed in 1842, and then surrounded the enclosure, has given place to a dense mass of streets and alleys, now teeming with a hard-working, industrious population. A magnificent structural fountain was generously erected by the Baroness Burdett-Coutts, and near here on Sundays in the summer will be found a gathering of the masses that would astonish many strangers.—J. W. MOORMAN.

(To be continued.)

VEGETABLES FROM NOVEMBER TO MAY.

[Prize essay read by Mr. Atkins, foreman in The Gardens, at Kelton, Aigburth, before the members of the Liverpool Horticultural Association.]

(Continued from page 545.)

ENDIVE.—As Endive comes into use when few other salading vegetables are to be had it should receive every attention, with a view to supplying well-blanching heads during the winter and spring months. For the main crop sow in June or July, and the end of August for a crop to stand over the winter. The seed may be sown in drills 9 inches apart, the plants thinned when large enough to 9-inch distances, and any blank spaces filled up. The plants should be protected with mats in severe weather, and damp should always be guarded against. They may be blanched by tying up the leaves with matting or covering with flower pots. The blanching process takes about a fortnight, and as they will not keep long in this condition a small quantity must be done at frequent intervals.

KALE.—This vegetable comes in very useful when hard frost has rendered Cabbages unfit for use. Sow early in April, and again in May for a succession, and plant out from June to the end of August in rows 2 feet apart. When the tops are cut off the stems should not be destroyed, as they will soon break again and form successional crops.

LEEKs.—Leeks form an excellent vegetable for winter use, and are also valuable as a potherb. Sow in February or March on a warm border, and transplant in June in heavily manured ground. They will be fit for use throughout the winter and spring months. Any not used before April should be lifted and their roots laid in loose soil to prevent their running to seed.

LETTUCES.—To obtain a supply of Lettuces during the winter months, sow the hardy varieties in September and October in cool frames, and thin out when large enough to 2 inches apart. They should be kept as dry as possible, and air admitted freely in fine weather. Frost must be excluded by covering the frame with dry litter, which should be removed on every favourable occasion. For early spring use sow in a warm frame in January and February, and transplant when large enough on a warm border or in cool frames.

MUSHROOMS.—The cultivation of Mushrooms is an important work in gardens, a constant supply being generally expected where the means of cultivation are at command. The principal material

required is horse droppings, which should be collected as dry and free from straw as possible. Spread this out thinly in a dry place as collected until enough has been placed together to form a bed. Then throw the material into a heap and turn frequently to allow all the rank steam to escape. When they are thoroughly prepared make it up into a bed, which may be of any form or size, according to the means at the disposal of the cultivator. In forming the beds the manure should be trodden down as firmly as possible. Holes must be made in the bed about 1 foot apart, and reaching nearly to the bottom to prevent heating too violently. The beds must be left for a few days before spawning, as the vitality of the spawn may be destroyed if they become overheated. The spawn must be placed in a warm moist temperature a few days before being inserted, as this insures a safer and quicker growth. A safe temperature at which spawning may be done is 80° to 85°. Break the spawn up in pieces 2 or 3 inches square, and insert it about 1 inch deep and 6 inches apart. The bed may then be covered with 2 inches of rather heavy loam, beaten down firmly and sprinkled with tepid water.

ONIONS.—Onions succeed best in a rich loamy soil and an open situation. The ground should be trenched and heavily manured in autumn, and left as rough as possible through the winter. It should be prepared in spring by a slight digging, levelling and treading firm. For main crop sow as early as possible in March, and for spring use sow the Tripoli varieties in August, and transplant as early in the following year as the weather will permit. Sow thinly in drills 9 inches apart, cover the seed lightly, and tread or beat the surface firm. Thin out the young Onions gradually when large enough until they are from 4 to 6 inches apart. Onions form the best bulbs on firm ground, therefore the rows should not be hoed between but kept free from weeds by hand. A slight sprinkling of soot in showery weather will be beneficial to the bulbs, and prevent the attack of the maggot. When the tops show signs of decay the Onions may be lifted, and exposed to the sun until thoroughly dry, they may then be tied up in bunches and hung in a cool shed.

PARSNIP.—This very nutritious root is easily cultivated, and when grown on good ground yields a bulky return. The ground intended for Parsnips should be trenched and manured in autumn. A deep sandy soil is most suitable, as the roots can have a free downward course; a stiff soil almost invariably produces forked roots. The seed may be sown in March in shallow drills 9 inches apart. When the seedlings are 2 inches high they should be thinned to 6-inch distances, and the ground always kept well hoed between the rows to kill weeds and benefit the plants. The roots may be lifted and stored away in autumn or dug up as required for use.

POTATO.—The Potato is perhaps the most useful and essential of all winter vegetables, its value as an article of food being specially recognised by the labouring classes. The sets required to produce the main crop should be planted in April; a suitable distance for strong growing varieties is 2 or 2½ feet between the rows and 8 or 9 inches between the sets, which should be placed at a uniform depth of from 4 to 6 inches. The sets may be planted in trenches cut with a spade or in holes made with a dibber. Trenches are to be preferred, as a more uniform depth can be secured, although the work will not be done so quickly.

When trenches are used a sufficient width of ground is prepared for one row, a line is laid, and the ground cut out to the depth required. Arrange the sets in the bottom of the trench, fill in, and prepare another space in the same manner. Farmyard manure suits them best, and may either be dug in at trenching time or spread in the trenches at the time of planting, beneath or above the sets. When the tops have risen 6 inches they should be earthed up, and if the soil be at all heavy the spaces between the rows should be first broken up with a heavy hoe or mattock, taking care not to go too near the roots. Lift the crop when the foliage has turned yellow, being left in the open air a few hours to dry, and stored away in a dry dark shed or Potato pit.

New Potatoes may be had in early spring by planting on hot-beds in deep pits. A quantity of stable litter and leaves should be prepared and put into a pit, and trodden down rather firmly. Place 9 inches of rather light soil over the manure, and plant the sets 12 inches apart and 3 inches deep. Dwarf compact sorts only must be grown under glass, and as soon as the weather allows after the plants are up pull off the sashes during the best part of the day.

SALSAFY.—This vegetable is in every respect, except in qualities, very much like the Parsnip, requiring the same treatment as to sowing in drills, thinning, hoeing among during summer, and taking

up and storing in October or November. It requires an open situation and a deep rich light soil, but the latter should not be newly manured, as it tends to the production of forked roots.

SAVOY.—Savoys succeed well in deeply dug and well manured ground. Sow in April in seed beds, and transplant in July in lines 18 inches apart, and an equal distance between the plants. The flavour will be much improved by exposure to frost before cutting.

SEAKALE.—This vegetable, being one of the easiest to force, is very extensively used. The main object in the culture of Seakale is to grow plants on to secure large crowns. To raise plants for forcing the best plan is to take cuttings from the roots, which may be obtained when crowns are being lifted for forcing. The strongest roots must be selected, and they are cut about 4 inches long, the crown end cut straight across and the other end cut on an angle that they may be easily known at planting time. The cuttings should be buried in sandy soil during winter, and in March or April taken up and planted in deep rich soil. Various methods may be adopted for forcing, but the most common mode is to lift the crowns, place them in large pots and stand them in a temperature of 55° to 60°, turning an empty flower pot over the crowns to exclude light. Another simple method is to place large pots made for the purpose over the crowns and cover the pots with stable litter. As the spring season advances Seakale may be obtained by placing pots over the crowns and filling the pots with ashes.

SPINACH.—The Prickly or winter Spinach should be sown in a sheltered situation about the middle of August, in drills 15 inches apart. The first sowing of the summer variety may be made in February on a warm border, and to maintain a supply a sowing must be made about every fortnight until April.

TURNIPS.—Turnips may be had in use during the winter months by sowing the hardy varieties in August. The seed is best sown in drills 9 inches apart, and when the plants are large enough they may be thinned to about 6 inches apart. A supply may be obtained in spring by sowing broadcast in a cool frame in February. Plenty of air must be given to ensure a sturdy growth, and when the plants are strong enough the frame may be removed. Another sowing may be made in March on a warm border for a succession.

CARNATION SOUVENIR DE LA MALMAISON.

PLANTS raised by cuttings or layering at the end of July or the beginning of August should have 3-inch pots well filled with active roots. These plants seldom do well if confined too long in small pots. If placed at once into 6-inch pots the roots will work freely amongst the new soil and start vigorously into growth early in the season. Carnations do well in a compost of three parts fibry loam to one of leaf mould; one-seventh of decayed manure being added, with a liberal quantity of coarse sand. The soil must be in an intermediate state for moisture and pressed firmly into the pots. Plunge the pots to the rim in ashes in a cold frame, and admit air abundantly during favourable weather. For some time after potting no water will be needed, and roots will form with greater freedom without it. During severe weather frost may be kept from the plants if practicable by placing litter round the sides of the frame, and mats or the same material over the top. Light should not be excluded from the plants more than is necessary. The pink and scarlet forms of this Carnation may be given the same treatment. The old, white, and crimson Cloves (W. P. Milner and others)—in fact, any free-flowering border varieties—will give satisfaction if grown on the same principle.

Directly growth is visible aphides will appear, and these must be destroyed at once or they will soon ruin the plants. Care must also be taken to prevent the plants suffering through an insufficient supply of water. Soot water in a clear state is beneficial after the plants have made a quantity of roots, but strong stimulants should not be given.—N. G.

WANDERINGS.

A CORRESPONDENT who believes himself, as he says, to be "typical," has written a letter to the Editor asking for "more wanderings," and the Editor has handed it to me. This indicates that I have been in close contact with an important personage, for it is not everyone who can gain access to a controller of the press. I have been told if Editors gave audiences to all who sought them their lives would be one long interview, and they would have no time at their disposal for producing what the public need. They, therefore, best serve the public by locking themselves up. It will be seen that our Editor did not apply to the wrong man on the present occasion—at least for mental wanderings,

for here I am in the thick of them. But I must return to my "typical" friend. It is not altogether mental wanderings that he wants, for he says (meaning himself and other "types," I presume) "we don't always want feeding with Chrysanthemums nor with heavy dishes of the 'best soil.' We don't want to know how we are to do this that or the other when we can't do it, or after we have done it, and then have to wait nearly another year before we can do it again; but we want a mixed menu—something solid and something light, for you know the old story of all work and no play and its gloomy results. Perhaps it is because we brothers of the spade work so hard that we have got into a dull way of expressing ourselves. We all seem to think on the same lines and plod on in the same groove. We want to straighten our backs now and then, and not for ever have our noses to the grindstone. We don't want to be continually telling each other what we are doing as if we were so many clever Jack Horners, but we want to know what is going on just outside the circle of hard routine, and thus spend a pleasant few minutes of free reading after a hard day's toil; so please give us a few more wanderings, not forgetting the episodes and occurrences that are met with even if they are not strictly 'gardensque.'"

That is the letter before me, and I am inclined to think if it had been addressed to me I should have sent it back to the author with a request for a "type" of what he really does want, for he is evidently my equal in wandering. Perhaps he will do so yet; I hope so, and I will do what I can to lead him on if he will follow me over the ocean. He need not be afraid of my exploring for his identity. If I did I should not get it. I once had a rather curious experience of difficulty of getting a name from an editor. It happened many years ago, but as I am invited to "wander," I shall neither be bound by limits of time nor space.

An article once appeared in a certain newspaper which a certain gentleman did not like. As he was a personal friend of the conductor he was, on calling, invited into his presence, where I also happened to be making a few arrangements with the view to possible eventualities. "Ah, good morning, my dear fellow, what a capital article that was in which I am honoured with prominence. Of course I cannot agree with everything in it, but the writer has put the case well from his point of view, and I am sure I should enjoy his friendship, if I do not already. You couldn't get me an introduction, could you?" "Oh yes I could," replied the Editor, and the interviewer rubbed his hands gleefully; "that is to say if I have permission. I will write and ask for it if you like." Checkmated decidedly, and then followed irateness, with first a "demand" and then a threat of an action. "Very well," was the calm response. "Mr. So-and-so is my lawyer, so it is useless our discussing the subject further." There was an interchange of professional letters, but the coveted "introduction" was never brought about; the writer's name was not obtained by the Editor's friend, and it certainly never will be, for he is dead, and that ends the matter. But the principle lives, and I am satisfied it is useless attempting to draw an editor, therefore my typical prompter can remain in obscurity just as long as he likes.

Now we are off. After reading about "foreign parts," a very dear friend, whom I will call Joan, asked if I would take her to the Continent. "Certainly; I will take you anywhere, from the Isle of Man to the Rocky Mountains—where is it to be?" It did not appear to be westwards, but eastwards, that the thoughts were trending, for the answer came, "I want to see Antwerp Cathedral, and I should like to see Mr. Van Geert and Mr. Everaerts; then that beautiful park I have been reading about at Brussels; and I should like to visit Ghent and see the Van Houttes; go up the Rhine and see the old castles; then round into Holland, and"—but that was enough for me, so I mildly suggested we had better first get to Antwerp and then go—well, according to the weather. It is now a case of Darby and Joan packing up, watching the wind, and trying to snatch a fine day and calm sea to speed us on our journey. It is a long time ago now, but that is of no consequence; we waited till the wind ceased blowing, and on the morning of the last day of August we hove in sight of the famous cathedral. It must be understood I did not go to Belgium in search of materials on which to write; and only a little can be remembered out of the much that was seen and enjoyed, but we do not forget the journey.

The route to select was a matter of serious discussion. One train started from London at 10 A.M., but that was too early, so we determined to go at midday, but missed the Thames steamer, and there was then nothing for it but to run down to Harwich and cross in the night. The steamers are large and fine, garnished with plants and flowers, and lighted with electricity. The night was clear, and water only broken by small ripples, from which the moonlight glinted, making a track like shimmering gold. The deck was pleasant, but after midnight we went below—Joan in charge of the stewardess, Darby looking after himself, which he has been trying to do under various circumstances for about half a century with more or less of success. He was fairly successful that night—at least for a time after, as the hymn-like song says,

"He laid him down in peace to sleep,
Rocked in the cradle of the deep."

But he had a rough awakening—a short but sharp shaking, as if being sent up like a shuttlecock, and on coming down again hit and knocked sideways, then caught once more and sent spinning, but before he got anywhere definitely had another great thump upwards, and so on for an hour or so. It was very different from digging. You know where you are when you are at spade work, but you are never in the

same place for two seconds and never know where you are going next when you are made the sport of the Storm King, even if he is not in his most violent mood. Poor Joan was, however, more cruelly treated. A night-long attack of *mal de mer* in its worst form was her sad fate, and the stewardess, after being specially "tipped" to give her special attention, slept like a top through it all, neither storm, silver, nor sickness disturbing her sweet slumbers. It is as well to tell the truth in these matters, and it is true that there was no tipping on the return journey; and thus we learn wisdom by experience.

We landed on a Sunday morning, and Sundays over there differ somewhat from Sundays at home. The crowds in the streets; the processions with their banners and their bands; the brisk trade in shops, cafés, and estaminets or taverns, with the overflow outside them, where men, women, and children quaff their bock from the tables across the pathway—all this is a little strange to a first visitor who has not been "brought up" to such customs as there prevail. But the crowd is not rough. The country folk, we were told, work hard and live hard all the week, then dress for a day's enjoyment in the towns on Sunday. Many come in dog-carts, but they are different from ours, for dogs draw carts there, sometimes three abreast, and sometimes running tandem; and perhaps if the Belgian peasants were told that our dog carts were made for dogs to ride in they would think us a very peculiar people. "But surely," we can imagine some of our good friends saying, "you did not spend your Sunday in that way?" No, we did not—at least, not exactly, for we kept out of the dog carts, and we did go to the cathedral service. High mass there is an imposing ceremonial. The magnificent paintings around you, the huge building filled with glorious music, and the great bell booming in unison; the genuflections of the priests half hidden in clouds of incense, and the evident devotion of the good Catholics to their service, was altogether something to be remembered. Apart from the paintings the cathedral does not startle by its interior beauty, but the tower, rising from the ground to a height of 402 feet, is superb by its architectural elegance, justifying its comparison by the first Napoleon with a piece of Mecklin lace.

We pass from the service into the Place Verte, once the churchyard, and now a large square of trees, with plenty of space for promenading between them, and find an open air concert in full swing, the cathedral congregation increasing the audience materially. From church direct to concerts appears to be quite the correct thing. The people seem to think they are none the worse for having been to church first, and appear to know very well that in our country many persons attend concerts regularly who never go to church. However, we did not linger at the concert, but went to the Plantin Museum, because nobody in Belgium seems to go home on a fine Sunday till he can help it. This museum contains a marvellous collection of everything in connection with printing, arranged in the ancient mansion of the Plantin-Moretus family, who carried on their famous business in the building for nearly three centuries. It was acquired with the ancient furniture, family portraits, tapestries, and stock-in-trade by the Corporation of Antwerp, and is free to visitors. Taking it all in all its equal is probably not to be found; and the systematic arrangement of its wonderful contents by Mr. Max Roosas, the accomplished director, is a triumph of patience and persevering work. Mr. Roosas, it may be added, is a son-in-law of Mr. Van Geert, and world-famed as a linguist and archaeologist. A drive down the boulevards followed, and now you have what is regarded as a very proper way of spending Sunday in Antwerp, with perhaps a turn into the Zoological Gardens at night, to sip coffee and listen to the music under a canopy of foliage. There sit thousands round the little tables, and feel more comfortable outside than in so long as the weather remains agreeable.

The next day, September 1st, will be remembered in Antwerp as the date of the introduction of omnibuses similar to those in London, and the new vehicles laden with passengers on the top caused quite a flutter of excitement. People flocked out of their houses to see them, and the drivers and conductors were tempted by innkeepers to "take something," perhaps as an inducement to establish stopping places on the way. The buses did a great trade from the first, and so keen were passengers for outside seats that they would not go inside, even when it rained, so long as there was room on the top. Trams have long been established, and the cars though plain are convenient. They are not enclosed in summer, but plain benches are arranged across a platform, about 18 inches above the ground, with a foot-board a little lower, running along the outside, on and off which passengers step all along the line—at least, those who are used to it, and they appear to be the majority. But if the Antwerpians were behind us with omnibuses, they lead us in some other respects; for instance, in public telephones, and by payment of a trifle anybody may talk with anybody else with whom he is put in communication in any part of this large, prosperous, and highly interesting ancient and modern city.

What strikes a stranger whose linguistic attainments is limited to his mother tongue is not the language he hears only, but which he sees displayed on signs and buildings. If a tradesman has wall enough he will tell you a good deal in Dutch or Flemish of what he is, does, makes, or sells; and you could almost fancy that long words are chosen as if to impress with the extent of the business, especially when it is obviously small. Something of the same kind is perhaps not unknown in other countries, including our own, for small people are apt to try and make themselves look greater than they are. But to these rows of Dutch letters that puzzle you so; the guide, who speaks English and Flemish too, will tell you there is not much

difference between them, and that if you look a few times at the Dutch method of arranging the alphabeticals you will soon evolve English out of them. There is something in that, no doubt, but all the same the one-language man finds some rather awkward words to deal with. As puzzles are in season at Christmas time I will set two for young British gardeners who are ignorant of Dutch to render into English without any assistance from dictionaries or otherwise, but simply by "looking at them a few times." One of these I managed to interpret because it is easy, but the other beat me. Here are the word puzzles:—

Indeniewepellicaan.
Gebreveteerdesuikerbakkerij.

To the foreman or journeyman gardener, who puzzles out the English of both, subject to the above conditions, I will send a prize; and if more than one succeeds he whose letter is first opened must have priority; if all fail I must give a little lesson in languages another day, for I have not quite done with Belgium. Replies may be sent to 171, Fleet Street, addressed to—WANDERER.

PEACH TREES UNDER GLASS.

GROWING Peaches under glass is one of the most important duties of many gardeners. No time should be lost in pushing to completion the work of pruning, washing, and tying to the trellises both Peach and Neetarine trees, afterwards giving attention to the borders in the manner set forth below. In pruning thin the shoots well, cutting back the old wood which bore fruit this season to a good healthy shoot of this year's growth, retaining those shoots which are situate lowest down on the old wood, and which are best furnished with fruit buds and sufficient in number to cover the trellis at about 5 inches apart. Shorten back weak growths to a wood bud, and any extra strong shoots of the current year's growth that can be dispensed with cut clean away, so as to divert the flow of sap into the weaker shoots, and thereby promote a balance of growth in the individual trees. This is an object that should never be lost sight of in the pruning any kind of tree. This done wash the glass and woodwork, and limewash the other parts. A few handfuls of sulphur stirred into the lime before using it is useful in making it distasteful to insects. Unless quite free from insects the trees should be washed with a solution consisting of 4 ozs. softsoap dissolved in one gallon of warm water, with two handfuls of sulphur well mixed. This should be applied to every part of them with a soft brush without doing damage to the buds. Should scale exist on the trees it will be necessary to add a wineglassful of petroleum to the above solution and sufficient clay to give it the consistency of paint. When dry, the branches are ready to be tied to the trellis, allowing, as already stated, a space of about 5 inches between shoots. This will admit of one young growth of next year's making being tied in between each pair of branchlets. Do not tie the shoots too tightly to the wires, otherwise growth will be impaired.

The borders next elaim attention. Point over the surface down to the roots with a fork, removing the loose soil, and adding a mixture composed of three parts good fibry loam and one of lime rubble and wood ashes, following this with a coating 2 inches thick of horse droppings or short manure, and finishing with a good soaking of tepid water. If ripe Pcaehes are required towards the end of next May or early in June the house should be kept close the middle or third week in this month, and the trees be syringed two or three times a day with water at a temperature of about 75°, and only use the heating apparatus to prevent the temperature in the house falling below 40° at night and 45° in the daytime. Admit fresh air to the house every favourable opportunity that presents itself. When the trees come into flower a drier and more airy atmosphere should be maintained, and to secure a good set the flowers should have a camel's-hair pencil or some other soft substance passed over them every day at about 11 o'clock. The probability is that during the time the syringe is withheld from the trees while the erop of fruit is being set that aphides will effect a lodgment on them. Therefore as soon as the fruit is set the house should be fumigated lightly a couple of evenings in succession to dislodge this pest, after which a free and well directed use being made of the syringe and tepid water morning and afternoon on bright days, together with judicious supplies of clear water and tepid liquid manure being given alternately at the roots, will be the means of keeping the trees free from the attack of aphids and red spider.

Disbudding the trees should be done by degrees, so as not to subject them to any check, which if done all at one time would follow the operation, and in the carrying out of which the formation of the trees for next year must not be lost sight of, as the necessary number of side buds should be left as low down on the old wood as they appear to balance the growth of the tree for another year. In thinning the fruit on healthy vigorous trees leave a space of about 4½ inches between the fruits at the first thinning, removing every other fruit a week or ten days later, and before the stoning process has been completed, as with such trees there need be no apprehension of the fruit dropping during that otherwise critical period. But in the case of trees the opposite of those indicated it will be wise to defer finally thinning the fruit until the stoning process is completed. After this the night temperature should range from 55° to 60°, with 10° higher by day of fire heat, increasing by 10° with sun heat, until the fruit begins colouring, when a more airy and dry atmosphere should be preserved so as to give colour and flavour to the fruits. In determining the number of fruit to be

left on each tree the size and condition of the latter must be taken into consideration, the best shaped and placed fruits being retained as a matter of course.—H. W. WARD, *Longford Castle*.

CLARKIAS.

SPRIGHTLY and charming flowers are Clarkias, and the improvement by selection that has been established in these hardy annuals of late years is very considerable. They are highly attractive in gardens during the summer from seed sown in spring, and the spikes when cut are suitable for furnishing vases gracefully. Our best displays of these flowers are usually towards the end of May and in June, from seed sown in the open in September. If sown sooner the plants grow too



FIG. 77.—CLARKIA MORNING GLORY.

tall before winter. At present those which were sturdy are safe under the snow. We are reminded of Clarkias now by an illustration of a new variety in Carter's "Vade Mecum" for 1891, and named Morning Glory. Flowers were sent to us in August, and were distinct in form from any we had seen, and very attractive. How far their peculiarity is fixed we have obviously not had time for testing; but it is well portrayed in the figure, with which we are favoured by the Holborn firm.

AS OF A DREAM.

"THE error is not contradicted about my jams. Why don't you write and contradict it?" Thus was I addressed some time ago at home. "Oh, well, I do not think it signifies." "But it *do* signify," was the quick response. "You have for the last thirty years wanted to take up my jams along with your home-made wines, and now the Royal Horticultural Society have invited me to do so, I feel quite jealous to find my exhibits reported in my favourite paper as having been shown by Mr. Roupell, who only took one jar of an exceptional kind." "Oh, well, I am quite sure Mr. Roupell does not want to be burdened with your forty extra pots; besides, the pages of the horticultural journals are so filled up about Chrysanthemums just now that they could not find room to give heed to our necessities of life; so good-night, my

dear. The subject might be entertained about Christmas time ;" and now I want an excuse to wish our Editors a Happy New Year, and to let them know that I am still in the land of the living, I will propose to do so—as of a dream.

December 16th.—"It is nearly Christmas time, and you have not done what you proposed." Oh, ah!—well, it is a longish dream, but sometimes if one dreams but an instant one's whole life appears shown over again. At any rate, the Black Currant jam "dog-in-the-blanket" that Alice made for dinner to-day was palpable, and as I have got a day or two's respite from those plaguey parish valuation lists I will at once relate a trifle about our late comical enterprises. I was not successful in an entreaty to bring up my wife's jams to the Fruiterers' Guildhall. Show along with a collection of my seedling Potatoes—these latter not necessarily for competition, but as giving an opportunity to a large gathering of the public as showing special suitability for culture, and quality, at the present day. I saw we could not show in rule, according to the schedule, so I tried to win over the Secretary in this way: "I feel myself in a great measure a city man, having bent the printers' backs there periodically since 1852 on practical horticultural subjects, and beginning in connection with the old *Cottage Gardener*; plus I was apprenticed to the watchmaking in Knightsbridge, when the site of Belgrave Square was a receptacle for the débris of London, and I have eaten Cherries from the trees on the site where I afterwards sat as a member of the Royal Horticultural Society's Fruit Committee." I fear I bothered Mr. Eagleton; but he let me down in an agreeable manner by "regretting that Potatoes were not within the scope of the Fruiterers' Exhibition" (the Pomme de Terre?), "and he feared he must confine me to exhibits as specified in the schedule." Thus the glory of the world passeth away! Not quite; for the Royal Horticultural Society was now making a departure, and had made up its mind for a jam show. Now our universal friend must be appealed to, because the schedule laid it down that "all jams, fruit, and jellies should be in clear glass jars, quart and pint bottles," which was simply kicking the ground from under us country people, who had their preserves already made, and stored away in any convenient teacups (handleless), or glasses and jars, as they promiscuously "come to hand" in country cottages. Mr. Barron's answer was just what we expected, "We shall be very pleased to receive Mrs. Fenn's interesting contribution in the style that Mrs. Fenn will present it; kindly let us know as to space desired both by yourself and your wife." Thus the Royal Horticultural Society had the first initiative after all in presenting to the public a complete selection of Apples, jams, &c., from a cottage homestead, and, as expressed by a label, to be appropriate for a small holder to grow—*plus*, in showing the utilisation of surplus fruits into jams, jellies, syrups, and beverages as human food.

You have got it in your archives in Fleet Street, in print, how I planted my first orchard, about 1836, at Stanton Lacey, near Ludlow. In 1852 and onwards I have mentioned many anecdotes of Mr. Thos. Andrew Knight, of Downton Castle, almost the next parish to Stanton Lacey, Bromfield intervening. Mr. Knight would hob-nob with anyone fond of horticulture. When in London he usually stayed with his daughter, Mrs. Walpole, in Upper Wimpole Street, and on my first visit to the R.H.S. Chiswick fêtes I rode on Mr. Walpole's carriage, which conveyed Mr. Knight thither as President in 1835, or it may have been 1836. Mr. Knight had a great objection to sleeping upstairs in London. His bedroom was the back dining-room on the first floor.

When I read of your visits to Downton and its neighbourhood, I have wished that I could have been with you; we would have gone and seen the rectory orchard, by the banks of the river Corve; the plantations and trees in the churchyard, nearly all of which I had a hand in planting, and which I should expect are now at their best as timber. And again, when you are visiting Nowton in Suffolk you would little suppose how I was at the planting of many of those trees you have so often, to my great pleasure, told us recently about. Why, I remember a greater part of the site of those trees as a common. My relatives lived as tenants under Mr. Oakes, and I was born at Rushbrook, the hall of which you must have seen upon the hill; and your old pages will tell how, as a child, I planted a young Ash tree against the cottage wall where I was born, and how it was kept sacred there till there arose the danger of its pulling the house down. I mention these things as a dream, but also as an assurance to your readers that I am not a novice in what I am about to advise them, at least that is those of cottage folk, to plant. Why I had for the matter of that planted my first garden and orchard, and was partaking of the jams and fruits thereof, when Mr. Gladstone was a good Conservative. But his airing of his jam theory has given the subject a thousandfold more impulse than a simple individual like myself could do, even by example, and precept, and writing, "how to do" these things nearly all my life.

This (my present home) is the third place I have, so to say, made and planted, and seen grow up. Everything here is in full practical working that is now so thoroughly being thrashed as to what "ought" to be done. I have seen, too, nearly the whole of the horticultural world grow up from boys into manhood, and many—too many of them—are gone over to the majority, and now, when I attend the horticultural meetings, I am scarcely known, at least so it seems to me. Perhaps it is a dream.

The Berks County Council had ordered a restamping of the weights and machines. So on the 10th of October we lifted the case containing our exhibits into my cart with the above, and drove direct to the South-Western Station at Reading, ordering my man to the county inspector with his portion. Then with anxiety about the missus's jams, by

keeping a sharp eye on the porter to see that the case was kept "this side up," I arrived in London during one of the densest fogs the metropolis could inflict. I self piloted through the fog the next morning, and "Big Ben" boomed the hour of seven as I arrived at the Drill Hall, but to find the trestles and tables just arrived from Chiswick. It would be "quite an hour" before my staging space could be occupied, and quite that period I surmised before the coffee shops transacted business. Drill Hall, not inviting; in the streets, a suffocating fog; pleasant; but breakfast most desirable; voyage of discovery for the same. "Soldier's Home" I read on a new building; "Cup of Tea half-penny, Slice of Bread and Butter, half-penny," with other reasonable prices. Enter:—I found chairs on the tops of tables, and men, old soldiers apparently (with buckets of water washing the floor), who civilly inclined to make way. Pray do not disturb yourselves, I merely want a cup of tea; and making up to the counter I inquired of the bar occupant, who was polishing some resplendent urns, "Is it too soon for a cup of tea?" "We have none ready, sir, but I can make you a pot of tea. Anything to eat with it?" Oh, yes thanks, some bread and butter, and would a slice of bacon be too inconvenient?" "I can cook you a rasher, but you will have to wait ten minutes," and he looked apologetically at the wet floor. I instinctively said, "The outlook in the street is far worse, and here comes the morning's papers for me to take a first peep." For civility and a know what to do I commend the Soldier's Home to all waifs and strays from the country in a thick London fog in the early morning. So to the Drill Hall, where my superfluous were ready by the time that I was for staging, and I gained the compliment of being "the first ready." But scant reports were given me and I seemed wounded in the house of my friends.—ROBT. FENN.

(To be continued.)



FRUIT FORCING.

PINES.—Preparations for producing ripe fruit during the months of May and June must not be further delayed. Black Jamaica, Smooth-leaved Cayenne, and Charlotte Rothschild, which failed to show fruit during October and November, will not now throw up in time to ripen at the period in question, therefore attention must be directed to those that attain perfection in less time, such as the Queen, Enville, and Providence. Choose at once those plants which have an enlarged base, with a tendency to open at the centre, signs of the fruit being shortly visible, placing them in a light house or pit, affording a brisk bottom heat of 85° to 90°, a top heat of 60° to 65° at night, 70° to 75° by day, and 10° more when the external conditions are favourable. A genial atmosphere should be maintained, but not be produced by steam resulting from syringing the hot water pipes, as syringing the plants once or twice a week is ample, and then very lightly, on fine afternoons damping the house. See that the soil is in proper condition as to moisture, using tepid water with a dash of guano or some approved fertiliser in it, applying it copiously about every ten days.

PEACHES AND NECTARINES.—*Earliest House.*—Less moisture is needed at this time of year than in spring, when the days are longer and more sunny. Cease, therefore, syringing the trees when the flowers show the anthers; but a moist atmosphere tends to weaken them, and should be guarded against by a little ventilation constantly, avoiding syringing the trees after the flowers show colour. A moderate moisture, however, must be maintained by damping the floor on bright mornings and early in the afternoon of fine days. The temperature may be maintained at 55° by day and 50° at night, but in sharp weather 50° by day and 40° to 45° at night is safer than the higher temperature. In fact, low but safe night temperatures invigorate, and are advantageous rather than otherwise. Inside borders must be kept moist, affording if necessary a thorough supply of water at a temperature slightly in advance of that of the house. Avoid, however, making the soil sodden by needless waterings, and particularly by dribbles that make the soil soapy whilst below it is dry.

Second Early House.—Anything required in the way of repairs, &c., must be attended to at once, and the trees must have their final dressing, if one be necessary, and be tied to the trellis. The house must then be closed, merely employing fire heat to exclude frost. This will accelerate the activity of the sap and the gentle advance of the buds, so that fire heat can be safely used at the beginning of the new year in houses that are to afford ripe fruit at the close of May or early in June. Besides, when the trees are brought on too rapidly they are apt to cast their buds, especially those of the early large flowered varieties. Alexander, Amsden's June, and Waterloo differ very little, and have large flowers, so also have Hale's Early, Early Grosse Mignonne, Early Alfred, and Early York, with Early Beatrice and Early Rivers. Varieties with large flowers do not bear forcing nearly so well as those with small flowers, which is due to premature development of the buds, but there are

exceptions. Yet as a rule the small-flowered varieties are better adapted for early forcing than the large-flowered for another reason—viz., that large flowers are often deficient of pollen whilst the other varieties afford pollen abundantly. Early Albert is one of the surest of early forcing Peaches, not liable to cast its buds like the large-flowered sorts. Early Louise, Dagmar, and Crimson Galande, all raised by the late Mr. Thos. Rivers, have small flowers, and precede Royal George or Stirling Castle in ripening, and with those no fault is to be found, except Early Louise, the fruits of which are liable to crack at the stone. Its constitutional vigour may have something to do with that, and when care is taken not to overfeed, it is the very best flavoured of all early Peaches, except Early Rivers, which also cracks at the stone, and its flowers being large do not afford sufficient pollen. All the large-flowered Peaches require to be brought on very gently; in fact, they should never be started until the new year, and every care even then must be taken, by timely removal of the roof lights, to prevent over-maturing of the buds. In Nectarines the surest and best are those with small flowers. Lord Napier and Hunt's Tawny are exceptions, but in these there is a tendency to blindness when the trees are subjected to very early forcing in consecutive years, yet not more so than in Elruge, but Rivers' Elruge (happily rarely seen) is apt to have blind buds. Perhaps the best Nectarine, having the good properties of Royal George Peach—viz., being equally good as a forcer as for cool culture, is Dryden. It has small flowers, and though of the Elruge type, is a decided advance on that esteemed variety. The fruit, however, is larger and better coloured, the tree having a better constitution. Stanwick Elruge, also, has small flowers and sets splendidly. The Orange Nectarines, of which Pine Apple is the chief, are not very early forcers; but Victoria, like Royal George Peach, is good everywhere, everything in size, colour, and quality of fruit, with certainty of crop that everyone desires. It, however, is late, following Royal George Peach, both of which seem to enjoy the generous treatment accorded fruit trees grown under glass. Damp the trees in the morning and early afternoon of bright days, and to accelerate the swelling of the buds turn on the heat by day, but it must not exceed 50°, and is better left alone until the house has been closed at least a fortnight. Protect the border outside with a little dry fern or litter, but avoid heavy coverings of leaves or stable manure.

Succession Houses.—Push forward pruning and dressing trees after loosening them from the trellis, cutting out any weak attenuated wood, thinning where crowded, leaving space between the current bearing wood for training in that intended to displace it. Thoroughly cleanse the house, dress the trees with an insecticide, secure the trees to the trellis, leaving space in the ligature for the swelling of the shoots, tight tying being prolific of gum. Remove the surface soil down to the roots without disturbing them, affording a surface dressing of good loam with a handful of bonemeal to every bushel of loam, and a similar proportion of wood ashes, or half the quantity of kainit, not covering the roots more than 2 to 3 inches deep. If inside borders are at all dry soak thoroughly with water or liquid manure if vigour in the trees is wanted, and keep the house as much ventilated as possible, or if the lights are off let them stay until the time arrives for starting, or the buds advancing necessitate protection.

FIGS IN UNHEATED HOUSES.—Unloosen the trees from the trellis or wall, have the branches tied together in convenient bundles, and cover them with a single thickness of mat, and then some dry straw or fern a few inches thick, securing with tarred string, mulching over the roots with some short dry littery material to a depth of at least 6 inches, thereby securing the safety of the roots, whilst covering the branches with straw or other material will not only insure them against frost, but tend to a more complete state of rest. If the trees are in an unsatisfactory state, arising from too rich, loose, and over-extended border, they should be given a chance of fruiting. Where the soil is too rich apply a dressing of quicklime and road scrapings in equal parts an inch or two thick, and mix it with the surface soil as deeply as the roots will allow without disturbing them much, and after resting a time and when in good order tread it firmly. If the trees make long-jointed wood it is best to lift them carefully and replant, making the soil firmer, using old mortar rubbish to the extent of a fourth and of road scrapings a sixth, mix together well and make it firm, curtailing the rooting area to at least half the width the trees cover of trellis. If the soil, however, be light and sandy, add a fourth of clay marl, dried, pounded, and thoroughly incorporated with the soil, which will tend to encourage shorter-jointed wood, improving the texture of the foliage, and increasing its power of elaboration, whereby the size and quality of the fruit is improved.

CUCUMBERS.—The weather has necessitated sharp firing, and there has been little sun, which is sure to result in weak growth. Light is very important for these plants in winter, therefore keep the glass clean both inside and out. Employ a covering of mats or other protective material over the lights at night, and have a mat over the doorway, so as to prevent the rush inwards of cold air when the door is opened, and avoid needless entries. Do not apply strong liquid manure too freely, but keep the roots active by judicious earthing, or surface dressings of rich, sweet, warm lumpy loam, sprinkling some horse manure over the surface, and if more vigour is wanted use a little superphosphate, to which has been added two-thirds of kainit. Avoid overcropping the plants, not allowing the fruit to hang too long. They keep fresh several days after being cut if the heels are inserted in saucers of water in moderate heat. Remove superfluous and ill-shaped fruits as they appear. Red spider must be kept under by sponging the leaves carefully, or they may be syringed with a solution of softsoap, 2 ozs. to the gallon of water, but care must be taken not to damage the

leaves. If mildew appear, flowers of sulphur must be applied to the affected parts, and a little brushed on the hot-water pipes mixed with skim milk, reducing the atmospheric moisture. Aphides, whether green or black, succumb to dusting with tobacco powder or fumigation on two or three successive evenings, taking care not to dry the atmosphere, and to deliver the smoke cool. Avoid the common practice of putting cinders in fumigators, they give off sulphurous fumes and destroy vegetation, and take care not to give too much.

Where Cucumbers or Melons are obtained from frames or pits heated by fermenting materials, some fresh Oak or Beech leaves should be thrown together, with one-third of stable litter, and, if necessary, be moistened so as to induce fermentation. The heap must be turned when warmed through, turning the outside to the inside, thoroughly incorporating the materials, alike to induce a genial state of warmth and to sweeten them.

THE BEE-KEEPER.

APIARIAN NOTES.

SUPERS FOR LANARKSHIRE HIVES.

"A HOWDENSHERE BEE-KEEPER" wishes to know what kind of supers I use. It is rather difficult to answer the question definitely, so many sorts have been used, and are still in use by me. For the last forty years I have had nothing but divisible supers, or those having little or no attachment to anything but the top bar, and perfectly straight. The first decade of these four I secured straightness by splitting the top bar and inserting guide-comb after removing the greater part of the side walls, then tightening the bar by two brass screws. Our hives then were mostly of the same sort as I now use, but minus the end or vertical pieces of the frames, a few octagons, and several of my first frame hives. The octagon supers were of the ordinary type as are usually sent out, and a per-centage of them with the rim in one piece, while in others I had them similarly made, but were small, four forming the complete super or cover. I have still the pattern of these beside me. If the supers are to be sold the bee-keeper should study what is likely to be easiest disposed of at the greatest remuneration. The full sized super gives the bee-keeper the greatest quantity of honey with the least outlay, and are sent to the market at less cost than sections are, with less chance of being damaged, and I have yet to be convinced that they are less saleable than sections, whilst their beauty is greater.

I also use a few sections, working them in the rims of ordinary supers. The rabbets intended for the bars hold a slip of wood for tightening them on end, and use tin frames suspended to sides of super for the sections to rest on. This is the best arrangement for sections I ever tried; a description of these has been in the hands of the Editor for some time, which may appear soon. I also use full sized supers, with and without end pieces, on bars. I prefer them without them.

Small supers are employed of different sizes, holding from 2 to 6 lbs. each. I prefer those holding about 5 lbs.; they are about 7 inches square by 4½ inches deep, being my standard for depth, the sides and top bars are one-eighth of an inch thick, and fronts and backs five-sixteenths, the rabbet for the top bar being about one-eighth deep and on. At first I had these as well as the hives dovetailed, or rather morticed or tenoned, because a true dovetail is wider on the in than on the outside, but I abandoned that, finding nailing superior both in firmness and for hives more lasting. The many joints in inside dovetailed work cause early decay.

Half sized supers and divisible supers I have also used, constructed so that one or any number of bars may be employed. I never nail the bars of large supers, but have always in readiness two light pieces of wood to screw to the top of super at the ends of the bars. I have omitted to say that all supers less in size than the outside of hive have an outer case to slip over them. This arrangement is absolutely necessary where the hives have to be moved about, and where all the divisions are clamped together.

with hinges or strong hooping there is little fear of bees escaping or supers being shifted or twisted.

I have other kinds of supers than those described, but I think unnecessary to detail them at present, the amplified statement being perhaps more than your correspondent desired, but which I hope may not be without its usefulness.

VENTILATING FLOORS.

I am glad to observe that your correspondent has succeeded in making a cheap hive with its ventilating floor. I trust he does not follow the advice given in a contemporary, re-making stands for hives, to nail the rim, plain joint at the corners. Such a slip shop method of putting together any stand is not commendable. A very little pressure out of the perpendicular soon causes it to collapse. It is in the neat and proper checking and nailing at the corners that gives strength to all stands or supports.

Since I communicated my intention a few weeks ago of making a few stands without feet in lieu of all my prize hives I had disposed of, I have now accomplished the work, but as I departed from my intention of keeping them without feet a brief description may not be unacceptable. The sides of the stands are 5 inches deep; the length of the feet is 8 inches by $2\frac{1}{2}$ by $1\frac{1}{2}$ inch. These are squared across 3 inches from one end, and a gauge set at five-eighths is run upon the face, and are then ripped to the cross mark, where it is cut in. The 3 inches form the feet proper, the sawn portion being nailed to the sides of the hive, and at their extremity, gives the stand a good grip of the ground, and reduces the oscillation to a minimum when in transit. The feet should be made from larch or red pine. They are much cheaper than iron, and are easily made by any amateur. The alteration in the bottom or false floor gives me great satisfaction. It is so easily opened or shut, and is always in place, yet it can be removed, cleaned, and replaced in a few seconds. It must be observed that these sizes of the feet should not be departed from. If the projections are more than five-eighths they might be the means of preventing an extra row of hives on the conveyances when taking them to the Heather.

—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

Cooper, Taber & Co., 90, Southwark Street, S.E.—*Catalogue of Seeds, 1890-91.*

John Laing & Sons, Forest Hill, S.E.—*Catalogue of Flower and Vegetable Seeds.*

Webbs, Wordsley, Stourbridge.—*Spring Catalogue, 1891 (illustrated with coloured plates).*



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Planting Vines (A. A. B.).—Your letter cannot be answered this week, but you have nothing to lose by waiting.

Dwarf Japanese Plants (Inquirer).—We hope to give the information you require in an early issue of this Journal.

Cineraria Leaves Curling (E. N.).—The position the plants occupy is not suitable for them. The dry air rising from the highly heated hot-water pipes is exactly what these plants do not like. If you cannot find a cooler place for them cover the stage with slates or anything else suitable for retaining a layer of cocoa-nut fibre refuse, sweet ashes, or fine gravel, and if this is kept damp the plants will thrive much better than on the dry open latticework stage. A temperature of 45° from fire heat is quite sufficient.

Artichokes and Parsnips (Graves).—You may tell your master from us that both his Artichokes and Parsnips are perfectly safe in the ground under the snow. It is convenient to have some taken up before the winter and stored where they can be readily obtained as wanted in severe weather, but if kept too warm and dry they will not be so good in quality as those left in the ground. We should let the crops remain where they are till the snow vanishes and the ground is in suitable condition for digging, when the roots can be taken out.

Missing Parcels (A. E. Coleman).—We have not been able to trace the missing parcel. If the box was substantial and the address made secure, it ought to have been delivered. We receive during the year several smashed boxes from which most or all the contents have escaped, also direction labels which have become detached from the parcels in transit. Two of such labels have reached us during the last month, but we have no means of knowing who were the senders. We shall be glad to receive a bloom of your sport on the first convenient opportunity, and to express an opinion thereon.

Propagating Chrysanthemums (Cork).—Some of the finest of plants and blooms have been grown both from sturdy suckers taken with a few roots bristling from them, and by striking the tops of strong suckers. It is more a question of selection of either, and of the means and methods in raising and growing the plants, than anything else on which success hinges. The excessive and prolonged flagging of cuttings, and which, in consequence, have scarcely strength to produce roots, though very common, cannot be regarded as a good commencement in Chrysanthemum culture. You had better, perhaps, try both the methods to which you allude, and thus ascertain which is the most applicable in your particular case.

Tomato Roots and Stems Cankered (R. G. M.).—The soil would be improved by the dressing you propose giving of quicklime, applying it at the rate of 3 lbs. per square yard, and mixing it thoroughly with a foot in depth of soil. The soot would be better applied afterwards, or before putting in the loam, sprinkling it on the surface and pointing in lightly. A peck per square rod ($30\frac{1}{4}$ square yards) is a proper quantity to use. It would be an advantage to add a little superphosphate of lime and kainit to the loam used for planting in, say a good handful to a bushel of the loam. Superphosphate and kainit may also be used as a surface dressing, taking two-thirds the former to one-third the latter, and applying at the rate of 4 ozs. per square yard.

Cox's Orange Pippin Apple (M. B.).—We are not aware that this delicious Apple is extensively grown in the United States or Canada for importation into this country. It is evident that the supply is not equal to the demand, or such high prices would not be obtained for, as you say, "inferior samples." We have seen hundreds of trees of Cox's Orange Pippin laden with fruit this season in one particular district, and where the crop had been thinned the samples were as good as any imported, but where thinning had not been resorted to the produce was of a decidedly trashy character, and the trees exhausted by their load of inferior fruit. In a few years' time the supply of home grown Cox's Orange Pippin Apples will be both larger and better than it is now, and we think you will not have long to wait for obtaining good samples at a reasonable price. Many trees have been planted during recent years, and ten times more fruit will be placed in the market next year than has been the case this, if 1891 proves what we hope it will be, a good Apple year. You can procure the small work to which you refer from a bookseller. It is published by Bell & Sons, Covent Garden, price 2s. 6d.

"Campanilla canariensis" (J. T. S.).—The plant which you say has been sent under the above name is perhaps *Canarina campanulata*, a relative of the Campanulas, and has been also named *Campanula canariensis*. It was figured in the "Botanical Magazine" in 1799, and thus described:—"The flowers of this plant so strongly resemble those of the Campanula that it is no wonder the older botanists regarded it as such; Linnaeus himself did so at first and Miller also, and even now it may perhaps be doubted whether it ought to be made a distinct genus of, since it is found to differ principally in number of its parts of fructification. It is a native of the Canary Islands, whence its name, was cultivated in the Royal Garden, Hampton Court, as long since as the year 1696, and is a tender herbaceous plant, to be found in most of our greenhouses. Its stem rises to the height of 6 or more feet; its flowers, produced singly from the fork of the stalk, are large and showy. They begin to open at the commencement of winter and continue to blow till March. Is propagated by parting of its roots, which must be done with caution, for, as the root is fleshy, if they are broken or wounded the milky juice will flow out plentifully, so that if these are planted before the wounds are skinned over it occasions their rotting. The best time for transplanting and parting of their roots is in July, soon after the stalks are decayed. The soil should be a light sandy loam, mixed with a fourth part of screened lime rubbish."

Pears for Cordons (*J. V.*).—The question for you to decide is this—Whether with so many trees you could dispose of the produce quickly and to advantage? If you have any doubt of this, the safer course would be to plant at the least half a dozen varieties. Late Pears realise the best prices, but autumn Pears often produce the best crops. Then, again, all varieties do not succeed equally well in all places. Now we understand your case more fully, we suggest as likely to answer your purpose Williams' Bon Chrétien, Louise Bonne of Jersey, Maréchal de Cour, Pitmaston Duchess, Doyenné du Comice, and Josephine de Malines. For affording a succession in three varieties, which was what we understood you to require, the three previously named answer well. Beurré d'Amanlis is an excellent grower and bearer, but from some soils the fruit is occasionally a little coarse and gritty, yet, generally speaking, it is a very useful Pear. If you were planting for home use you would require at the least thrice the number of varieties to insure a continuous supply. You must remember that Pears cannot, like Apples, be kept for any considerable time after they are ready for use, and a loss not infrequently ensues when the whole of the fruit cannot be promptly disposed of. You would probably not err by growing a dozen or two trees each of Glou Morceau and Bergamotte Esperen.

Screen for Garden (*W. T. S.*).—Your question appears almost exactly similar to one we have previously answered. As you cannot spare much room for the screen a neat hedge would be suitable. We should plant two upright-growing Conifers, such as Cupressus Lawsoniana, at the ends of the flower border, and they would mask the extension of the border in the kitchen garden, and have an ornamental appearance from the house. A hedge could then be taken across either on the kitchen garden side of the path next the lawn tennis ground, or at the other end nearer the fowl run, the former plan we should think preferable. We should raise a mound on which to plant the hedge, which on the path side next the lawn could be faced with rockwork and planted so as to be ornamental. The entrance to the kitchen garden could be by the two side paths, forming another behind the hedge to reach the central walk. The question of forming the hedge is very much a question of cost. The Japanese Privet is cheap, quick growing, and neat; but Conifers have a more feathery appearance, and good sized plants to begin with, say of the Cupressus named, would cost much more than similar plants of the Privet. A cheap method of forming a screen in summer is to sow a row of Sweet Peas, Scarlet Runner Beans, or Sunflowers, but a permanent evergreen screen would be the more satisfactory.

Managing Fruit Trees (*Yew*).—Under the circumstances it is scarcely necessary to publish your letter, but we shall be glad to insert an account of your experience at some future time. There was no wonder at the trees being unsatisfactory. Twisting the roots into small holes made in the subsoil is a method of planting that no gardener would adopt except under compulsion, and we know of two instances where the owners of trees insisted on that practice being carried out, one of them on the ground that the sun would not dry the roots, the other to make the trees stand firm without stakes. If you have planted your trees in accordance with the instructions given in the Essay they are planted correctly. You had better not prune them at present, but in spring remove any ill-placed or weak branches, leaving the more promising and best disposed a foot or more apart, and if the spurs are much crowded on these thin some of them out so that you can lay your hand between those remaining. Some of the branches, if they extend unduly may be shortened, and the whole of them should have a small wood bud, not a large blossom bud, at the end for continuing the growth; therefore if blossom buds cluster at the ends of the branches, as is not uncommon with stunted trees, cut them back to wood buds, even if this somewhat interferes with the symmetry of the trees. Should blossom buds be very numerous in the spring it will be advantageous to remove some of them before expansion, leaving one or two on each spur; these will then be strengthened accordingly, and if the fruit sets there will be ample for a crop next year. There is still the contingency of frost destroying the blossoms if protection cannot be devised for their preservation. We trust you may be able to effect your wish in having at least "one fruit" from each tree.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. (*J. G.*).—Pear Comte de Lamy, Apple Cockle's Pippin. (*D. S.*).—1, Braddick's Nonpareil; 2, Court Pendu Plat; 3, Wyken Pippin; 4, Northern Greening. (*G. L.*).—The Pear is Bergamotte Esperen.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*J. T. S.*).—Your Campanilla canariensis is probably Canarina campanulata, respecting which see reply on preceding page. (*R. B.*).—1, Erica hyemalis; 2, A good variety of Epiphyllum truncatum; 3, Aralia Sieboldi. (*W. W.*).—1, Adiantum trapeziforme; 2, Asplenium bulbiferum; 3, Lomaria gibba; 4, Davallia Mooreana.

COVENT GARDEN MARKET.—DECEMBER 24TH.

No alteration in prices. Business somewhat better. Hothouse goods in fair supply.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, $\frac{1}{2}$ sieve	1	6	to	6	0	Lemons, case	20	0	to 23 0
" Nova Scotia and						Melons, each	1	0	2 0
Canada, per barrel	15	0				Oranges, per 100 ..	4	0	9 0
Grapes, per lb.	0	9				St. Michael Pines, each..	2	0	6 0
Kentish Cobs	65	0				Strawberries, per lb. ..	0	0	0 0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes, dozen ..	0	0	to	0	0	Mushrooms, punnet ..	1	6	to 2 0
Beans, Kidney, per lb. ..	0	6				Mustard & Cress, punnet	0	2	0 0
Beet, Red, dozen	1	0				Onions, bushel	3	0	4 0
Brussels Sprouts, $\frac{1}{2}$ sieve	1	9				Parsley, dozen bunches	2	0	3 0
Cabbage, dozen	1	6				Parsnips, dozen	1	0	0 0
Carrots, bunch	0	4				Potatoes, per cwt. ..	3	0	4 0
Cauliflowers, dozen ..	2	0				Rhubarb, bundle	0	2	0 0
Celery, bundle	1	0				Salsafy, bundle	1	0	1 6
Coleworts, doz. bunches	2	0				Scorzonera, bundle ..	1	6	0 0
Cucumbers, doz.	2	0				Seakale, per bkt. ..	2	0	2 6
Endive, dozen	1	0				Shallots, per lb. ..	0	3	0 0
Herbs, bunch	0	2				Spinach, bushel	1	0	2 0
Leeks, bunch	0	2				Tomatoes, per lb. ..	0	4	0 8
Lettuce, dozen	0	9				Turnips, bunch	0	0	0 4

CUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	4	0	to	8	0	Mimosa (Fench.) per bnch	0	9	to 1 0
Bouvardias, bunch	0	6				Narciss (Paper-white),			
Carnations, 12 blooms ..	1	0				French, doz. bunches ..	4	0	10 0
Chrysanthemum, 12 blms.	1	0				Do. Do. English,			
" 12 bunches	3	0				per bunch	1	0	1 6
Epiphyllum, doz. blooms ..	0	4				Pelargoniums, 12 trusses	1	0	1 6
Eucharis, dozen	3	0				" scarlet, 12 bnchs	4	0	6 0
Gardenias, 12 blooms ..	6	0				Poinsettia, dozen blooms	4	0	9 0
Hyacinths (Roman), doz.						Primula (double) 12 sprays	0	6	1 0
sprays	0	6				Roses (indoor), dozen ..	0	6	1 6
Lapageria, 12 blooms ..	2	0				" Red, 12 blooms ..	1	0	2 0
Lilac (French) per bunch	5	0				" Tea, white, dozen ..	1	0	3 0
" longiflorum, 12 blms.	4	0				" Yellow	3	0	5 0
Lily of the Valley, dozen						Tuberose, 12 blooms ..	0	4	0 9
sprays	3	0				Tulips, per dozen	1	0	2 0
Maidenhair Fern, dozen						Violets (Ferne)	3	0	4 6
bunches	4	0				" (dark)	1	6	2 6
Marguerites, 12 bunches	2	0				" (English), doz. bnch	1	0	2 0
Mignonette, 12 bunches ..	3	0				Wallflower, doz. bunches	3	0	6 0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Aralia Sieboldi, dozen ..	6	0	to	12	0	Hydrangea, doz. pots ..	9	0	to 18 0
Arbor Vitæ (golden) doz.	6	0				Lilium lancifolium, doz.	0	0	0 0
Chrysanthemum, per doz.	6	0				" longiflorum, doz.	0	0	0 0
Climbing Plants, various,						Lily of the Valley, per pot	4	0	6 0
dozen pots	4	0				Lobelia, per doz.	0	0	0 0
Dracæna terminalis, doz.	24	0				Marguerite Daisy, dozen	6	0	12 0
" viridis, dozen	12	0				Mignonette, per dozen ..	4	0	6 0
Epiphyllum, per dozen ..	12	0				Musk, per dozen	0	0	0 0
Erica, various, dozen ..	12	0				Myrtles, dozen	6	0	12 0
Euonymus, var., dozen ..	6	0				Nasturtiums, dozen pots	0	0	0 0
Evergreens, in var., dozen	6	0				Palms, in var., each ..	2	6	21 0
Ferns, in variety, dozen ..	4	0				Pelargoniums, per doz. ..	0	0	0 0
Ficus elastica, each ..	1	6				Poinsettia, per doz. ..	9	0	15 0
Foliage plants, var., each	2	0				Rhodanthe, per dozen ..	0	0	0 0
Fuchsia, per doz.	0	0				Stocks, per doz.	0	0	0 0
Geraniums Scarlet, p. doz.	2	0				Tropæolums, various, per			
Hyacinths (Roman), doz.						dozen	0	0	0 0
pots	8	0				Tulips, dozen pots	8	0	12 0



CHRISTMAS NOTES.

No great change have we to record this Christmas in the agricultural situation, but the fact of the superior quality of the cattle at the great Christmas market at Smithfield, and of the fat beasts at the Smithfield Club Show at Islington is sufficiently remarkable to have special mention made of it. That there is a decided improvement in the quality of imported beasts as well as home-bred stock is certain; but at the great Christmas market Scots still held the lead which they have taken so long, and though decided efforts were made to force up prices there was no proportionate general advance.

The fat stock show season is one of the best we have had. At the Birmingham Show there were fifteen beasts each weighing 1 ton and upwards, live weight, the heaviest beast being a Hereford weighing 21 cwt. 3 qrs. 9 lbs., its age being three years ten months,

the others comprising Welsh, polled Scotch, Sussex, and Short-horns. The whole of these abnormally heavy beasts were over three years, having evidently been kept for show rather than profit, and not one of them can be taken as an example for ordinary practice. This keeping of "over-yearred" beasts is a mistake, and the Committee of the Birmingham Show marked their sense of it this year by offering only one prize for beasts over three years. Mere prizewinning ought certainly not to be the end and aim of competitors in such shows, and early maturity must be kept to the fore.

At the Agricultural Hall, Islington, the Judges were so pleased with the eight Devons in the class for young steers that they were commended *en bloc*. The age of the first prize beast was 584 days, and its average gain in weight per day since birth was 1 lb. 14 ozs. In the same class for Herefords the best beast was 611 days old, with an average gain in weight per day of 2 lbs. 2½ ozs.; but this average was beaten by Her Majesty the Queen's young Shorthorn, 577 days old, with an average daily increase of 2 lbs. 6½ ozs. The champion beast of the Show was the Queen's Shorthorn heifer Princess Josephine II., which was sold to Mr. John Jones of Llandudno for the marvellous price of £160. Her live weight was 16 cwt. 2 qrs., and the price given equals 1s. 9d. per lb. live weight, but sinking the offal it brings the price up at dead weight to 3s. per lb. Her record is so remarkable that we give it in full. At the Birmingham Show she gained first-class prize, £15; best Shorthorn, £50; Elkington cup, £105; total £170. At Islington first-class prize, £20; best Shorthorn, £25; best cow or heifer, £50; Horley's prize, £5; champion plate, £105; total £205; or won in prizes £375, sold for £160, total £585.

Sheep were more numerous than usual, and were remarkable for general excellence, the champion prizes going to Lincolns among Long-wools and to Hampshire Downs for Short-wools; and in these two breeds lambs under twelve months gave the highest daily average in weight increase, that of the Lincolns being 12½ ozs. and of the Hampshire Downs 12 ozs., the best lamb of that breed belonging to Mr. W. Newton, being the heaviest lamb in the show. It was 314 old and weighed 236 lbs., thus well maintaining the pre-eminence of this breed for early maturity.

The entries of pigs were also more numerous than usual, the Berkshires taking chief honours, and Tamworths were much better shown than they were last year. Middle Whites were well represented, and we do not know a more useful class; some of those shown were perfect pictures, over which a fancier would linger with delight. Surely it was one of those enthusiastic persons that penned the following lines:—

"I would like to be a pig, is my incessant, heart-felt sigh—
And to wallow, wallow, wallow in a warm and cosy sty;
To feel myself upon the straw so comfortably stout;
To exercise activity by the twiddling of my snout;
To open for a moment an appreciative eye.
Oh! might I be a pig like this, how sweet to live and die!
Such is the contemplative life—reposing, peaceful, still;
Enjoying with tranquillity the sweet unworked-for swill;
The future all so rosy, and the present all a "cram,"
Secure of a most useful immortality in ham,
For eating is elysium, and sweet it were to me
To think the more that I could eat more useful I would be."

The arrival at the Deptford Cattle Market of 422 prime Christmas bullocks from the United States of America is a new feature, as these cattle averaged 1900 lbs. live weight, or nearly 18 cwt., and were well bred. The fact is significant, and should not be overlooked by our home breeders of cattle. All that is possible in the way of improved breeding and the development of early maturity should be done, for that is the only way to meet foreign competition.

The attention of dairy farmers is called to Mr. T. Nuttall's assertion that the complete removal of buttermilk and caseine in

churning and butter working ensures the removal of all unpleasant flavour of Turnips or other food from the butter. It is also claimed for the American simplex churn that it does this perfectly, the process of butter making being by the novel plan of allowing a stream of air to ascend through the cream. The introducers of this churn offer to purchase cream from any description of feed, so confident are they in efficiency of the churn in getting rid of all impurity from the butter. We hope shortly to see this novelty at work, and to report upon it, for if all is true that is said about it it should prove a real boon, and cause really palatable butter to be far more common than it now is.

WORK ON THE HOME FARM.

Advantage has been taken of the frosty weather to clear away an accumulation of manure from the pig yards to heaps at convenient points for the root crops of next season. The manure is placed upon a bed of road sidings about a foot in depth, and when the heap is finished it is at once covered with a coating of several inches of soil. It will be turned over once, and the soil well mixed with it next March, just before it is used. Of course the temptation to cart straight from the yard out upon the land now while the surface is frozen is great, but the loss of fertility from the manure is so great when thus exposed that we altogether prefer the heaps or mixens made as the manure can be had and left till spring.

Some large heaps of clay burnt some months ago are now being carted and spread upon heavy land that is being drained in readiness for the steam cultivator, which will be set to work immediately after the drains are finished. The land is very heavy, and the drains are only 15 feet apart and 20 inches deep; this close draining, with plenty of ballast worked well down to the subsoil, should get rid of the superfluous water. That drains alone will not do so we have long been convinced, and we recently had additional proof in some tree stations from which the soil—a tenacious clay—had been taken out to a depth of 2 feet only 6 feet from a drain, yet when the holes became full of rain water the drain had absolutely no effect upon them, and each hole had to be connected with it by means of a short branch drain. Some old drains are also being examined and all outfalls cleared of obstructions. It is always advisable to set the eyes or ends of main drains in brickwork, especially when they are in the sides of a pond or ditch where cattle go to drink, for if the pipes are set in a wall of turf sods, as is so often done, the turf soon gets trampled down and the pipes closed. This poaching of the margins of ponds by cattle renders them so unsightly that we always like to harden them with gravel for a width of 2 yards from the edge of the water. This is not unsightly, for the grass gradually spreads among and conceals the gravel, and the pond sides are always firm. The common plan of having a narrow drinking place to a cattle pond is decidedly wrong; the sides of the pond should have no high banks, but should slope gently down to the water, which is then accessible from all sides.

The lambing folds are now being made on the south side of a dense belt of trees, the enclosure being formed by a double line of hurdles with straw between them, and there are plenty of cribs around the inner sides with roofs of thatched hurdles.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain
1890. December.	Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature.		
		Dry.	Wet.			Max.	Min.	In sun.	On grass	
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday	14 30.651	20.2	20.0	N.W.	35.3	30.0	17.0	57.1	13.8	—
Monday	15 29.773	24.0	23.9	S.W.	34.8	31.1	19.7	31.4	14.9	0.058
Tuesday	16 29.798	29.4	28.8	E.	34.3	31.0	23.7	30.8	21.2	—
Wednesday ..	17 29.889	30.0	29.2	N.E.	34.2	31.9	26.9	36.0	26.2	0.010
Thursday	18 29.811	30.2	29.3	N.E.	34.0	31.0	24.1	32.3	20.1	0.212
Friday	19 29.242	26.9	26.8	E.	34.0	29.7	25.6	34.1	25.7	0.078
Saturday	20 29.831	21.9	21.7	N.E.	34.0	33.4	15.6	36.6	6.9	0.184
	29.781	26.1	25.7		34.4	31.2	21.8	34.0	18.4	0.542

REMARKS.

14th.—Brilliant throughout.

15th.—Snow from 9 to 10.30 A.M., and ice needles at intervals all day. High fog all afternoon, and at times darkness like night.

16th.—Overcast, but free from fog.

17th.—Overcast morning; slight snow all afternoon; fair evening.

18th.—Overcast and gloomy all day; intensely dark from 9.30 to 11 A.M.

19th.—Snow commenced in small hours, and by 9 A.M. was 2.3 inches deep; another inch had fallen by 0.30 P.M., and occasionally a few crystals fell in afternoon; fair evening.

20th.—Occasional snow in morning, and an almost continual fall in afternoon and evening.

A week of extremely sharp frost, unequalled since January, 1881. G. J. SYMONS.

